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Optoma GT5000 DLP projector
ELAC subwoofer
Sony BD player
Marantz AV amp
Zemi Aria speaker

SKY Q: TV REBORN!

Why the 4K-ready Silver PVR is a home cinema hero

MEGA TEST! Soundbase speakers on trial

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- THE 5TH WAVE
- GOOSEBUMPS
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From players to platters, we celebrate 10 years of the HD format

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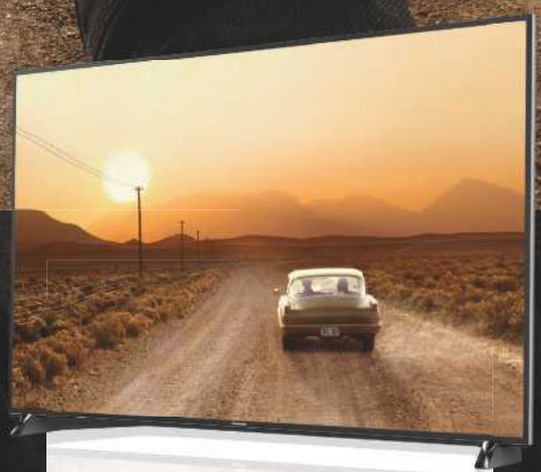
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Welcome



Where does your home cinema content come from? Chances are, a variety of places – modern technology means we can enjoy quality AV from disc, digital streaming and TV. For many of us, however, Blu-ray remains our first choice, and this issue we're celebrating 10 years of the HD format (the first discs launched in June 2006) with an in-depth look at its origins, developments and landmark releases.

Blu-ray's story isn't finished, of course. **The new Ultra HD iteration delivers the upgrade path that movie enthusiasts have been demanding**, with titles (such as *The Revenant*, reviewed on p98) outstripping their Full HD counterparts when it comes to detail and dynamism. But what about life beyond discs? Our cover star, Sky's new Sky Q Silver PVR, prepares the satellite service for 4K content. It's an intriguing proposition, and suggests that if the eventual future of home cinema isn't physical, it's certainly in good hands.

Mark Craven
Editor



MENU









CONTRIBUTORS



John Archer: The UK's most experienced TV tester cut his teeth as an early *HCC* staffer



Jon Thompson: Film producer and post-production expert delves deep into Hollywood and AV



Steve May: *HCC*'s former Editor-in-Chief is one of the UK's most respected AV journos



Martin Pipe: Technical expert Martin is renown throughout the home cinema industry



Adam Rayner: The UK's foremost expert in extreme audio writes about bass, hi-fi and, er, cartoons



Adrian Justins: Made his name as the editor of *What Video & TV* and *What Home Cinema*

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Add these Blu-rays from the man behind *The Hateful Eight* to your collection

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WHAT HI-FI? ★★★★★ LG EG960V MAY 2015

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AWARDS 2015 LG EC970V WINNER TV OF THE YEAR LG EC970V

Model shown E6

BULLETIN

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Big screen, small price

Hisense 75M7900 → www.hisense.co.uk



SCARILY GOOD
Family fright-flick *Goosebumps* is a monster hit on Blu-ray, p101

Value for money is the name of the game when it comes to Hisense's 75M7900 TV. Measuring a vision-filling 75in, this 4K flatscreen retails for around £2,500, representing an appealing saving on similar-sized models from rival brands. Specs include 3D support, integrated apps for Netflix, Amazon and BBC iPlayer and four HDMI inputs – two with HDCP 2.2 support. It offers HDR playback, too, but isn't Ultra HD Premium certified, claiming a brightness rating of around 400 nits.

HCC ONLINE...

For breaking AV news, blogs, features and reviews visit **www.homecinemachoice.com**
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Viva la Reva!

Wharfedale Reva Series → www.wharfedale.co.uk

Built around many of the same design principles as the brand's Diamond 200 Series, but with a number of refinements and upgrades aimed at raising the bar sonically and aesthetically, Reva is Wharfedale's new line of premium speakers. Initially available in a choice of piano black, piano white and rosewood finishes, the range consists of the Reva-1 (£500/pr) and Reva-2 (£600/pr) standmounts; the Reva-3 (£1,000/pr) and Reva-4 (£1,300/pr) floorstanders; and the Reva-C centre (£400).



Denon upgrades HEOS



Denon has given its HEOS wireless multiroom sound system an upgrade. Dubbed HS2 (HEOS Series 2) the tweaked system now offers built-in Bluetooth functionality; compatibility with Windows Phone, PC and Mac; and the ability to play hi-res WAV, ALAC and FLAC audio files up to 24-bit/192kHz via network or USB. The HS2 range kicks off with revamped versions of the previous HEOS 1, 3, 5 and 7 multi-zone speakers, the HEOS Amp (pictured) and the HEOS Link pre-amp. www.denon.co.uk

PMC launches step-up range



UK-based speaker manufacturer PMC is celebrating its 25th anniversary with the launch of its new Twenty5 range. Consisting of two standmounts (5.21 and 5.22) and three floorstanders (5.23, 5.24 and 5.26), the lineup boasts a number of enhancements and innovations over the brand's previous Twenty models. One of these is the new Laminair vent technology, which PMC claims results in 'a faster, higher-definition bass with accurate timing and dynamics,' courtesy of a smoother airflow. pmc-speakers.com

Sony prepares for 4K BD

New look deck is a tech test for the next generation, confirms company

If you're curious about Sony's 4K Blu-ray plans, then the brand's new UHP-H1 disc spinner (reviewed on p52) may offer more than a few clues. Sony product specialist Eric Kingdon told *HCC* that the newly-launched Blu-ray flagship contains a host of technologies that may well form the basis of its UHD debut further down the line.

'It's no secret to say we are currently working on a 4K UHD machine,' says Kingdon. 'CEO Kaz Hirai has already said we're going to launch a 4K player – there will be a global introduction before the end of the fiscal year [March 2017]. In fact, that's one of the reasons we wanted to develop the UHP-H1 first.'

In Japan, the UHP-H1 (below) is being sold as 'a premium audio visual player' explains Kingdon. 'The engineers who worked on this model are also responsible for developing our 4K machine. So for them it's been an opportunity to put a lot of future know-how, a lot of forward-thinking, into this player. Any ideas and feedback that spring from this can be implemented into the next generation.'

Consequently, Kingdon says the UHP-H1 shouldn't be viewed as 'a substitute' for a 4K machine. 'It's actually more a replacement for the BDP-S7200,' he says. 'It introduces all new video circuitry, as well as new multiroom streaming functionality. A lot of people are talking about 4K now, understandably, but this little machine is still quite a gem.'



Eric Kingdon: 'The engineers who worked on the UHP-H1 are also responsible for developing our 4K machine'

One aspect Kingdom wouldn't be drawn on was a launch date for its 4K UHD Blu-ray debutante. But that 'global introduction' before the end of Sony's financial year might put the big unveil squarely at CES 2017, with a possible street date for a player in April/May.

Audiophile ambitions

Kingdon adds that the brand has also developed a new approach to handling PCM and DSD audio – the latter now enjoying a fashionable renaissance with the brand's first DSD-ripping vinyl turntable, the PS-HX500. 'For the first time, we've been able to offer optimum processing for both PCM and 1-bit DSD. That means you can get the best processing for Blu-ray soundtracks and music. If you play DSD you can optimise playback.'

As part of a broader home cinema refresh, Sony is introducing more soundbars this summer that can be partnered with wireless surrounds to create multichannel home cinema. Kingdon adds that its premium NT5 soundbar will also work with other Sony multiroom sound systems. 'The next version of our SongPal app will allow users to set up wireless surrounds, as well as offer wireless stereo pairing for individual speakers.'



Sony is pushing soundbars with wireless surrounds

Playlist...

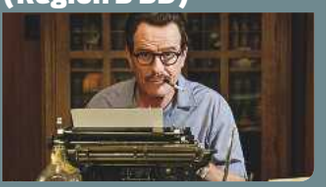
Team *HCC* spins up its disc picks of the month

Star Wars: Episode VII – The Force Awakens (All-region BD)



With its reference-quality 1080p visuals and lossless audio, plus a bumper crop of extras, this Blu-ray is currently the one to beat

Trumbo (Region B BD)



Superb performances from Bryan Cranston and Helen Mirren make this biopic about the blacklisted screenwriter extremely enjoyable

Beat Girl (All-region BD)



The BFI's Flipside label serves up a loaded HD platter for this trashy 1960 British B-movie about a wayward teenage girl

Creed (All-region BD)



The *Rocky* spin-off punches above its weight on Blu-ray thanks to its superb AV performance

The Dressmaker (Region B BD)



Kate Winslet cuts loose in this uneven but enjoyably quirky Aussie comedy-drama

At the 'plex...

Heading out to see a flick? Catch these this month

The Conjuring 2



June 17: Taking its cues from yet another supposedly true story, this sequel to the 2013 supernatural hit finds Ed and Lorraine Warren travelling to England to investigate strange goings-on in a house in Enfield.

Independence Day: Resurgence



June 24: Twenty years after their first invasion the aliens are back! Expect plenty of landmarks to be destroyed while Jeff Goldblum cooks up a way to stop the ETs.

Central Intelligence

July 1: Dwayne 'The Rock' Johnson stars alongside Kevin Hart in this upcoming action-comedy. Hart plays a mild-mannered accountant lured into the world of espionage by an old school friend (Johnson) who has transformed himself from an overweight geek into a lethal CIA spook.

MQA heading to Blu-ray

Studio master audio format not just a boon for streaming, says creator

New studio master-quality audio codec MQA is coming to Blu-ray. So says creator Bob Stuart, who believes there's growing interest in using the format on physical media. 'There are some territories that are excited about having MQA-encoded audio Blu-rays and CDs,' he told *HCC*. 'Markets like Japan that are heavily into physical products.'

The revelation follows a slew of MQA hardware announcements at the recent Munich High-End audio show, and the signing of Warner Music as the first major label to embrace the technology. Warner Music joins a growing list of smaller labels committed to offering MQA titles, including 2L, Jazz Arts, Eudora Records and Triplet Records.

Included in 2L's launch lineup is an MQA remix of the Marianne Thorsen and Trondheim Soloists *Violin Concertos* 2006 release (pictured), 'white gloved' by 2L founder Morten Lindberg and Stuart. The duo de-archived each individual mic feed for the project.



Bob Stuart: 'There are studies that show that the higher the sound quality, the more people will listen'

The time has come

Significantly, Warner's support comes as it confirms streaming has become its biggest source of music industry revenue. However, Stuart states that the two announcements aren't actually linked.

'There's no conspiracy. The MQA negotiations have taken more than two years, and they ended when they ended rather than when streaming became more important,' he reassures. 'MQA is obviously important for streaming companies, but it's also important for downloads and physical media because it's convenient.'

Stuart says that it's no surprise that MQA will make in-roads into physical media. The global audio market is heavily fractured, he explains. 'America is still the biggest territory, with Japan second.' The UK, Germany and France make up the rest of the top five. 'However, physical media sales are lowest in America and highest in Japan.'

So far, MQA hardware support has primarily come from niche audiophile brands. At the Munich show, German maker Brinkmann announced its MQA-compatible Nyquist DAC, while Bluesound promised a firmware update for its wireless speaker range. However more familiar marques are on the cards. 'It takes larger companies longer to do things,' explains Stuart. 'We're talking to some very big names.'

While the inventor of MQA and founder of Meridian declined to go into specifics, Stuart did hint that more news is coming. 'I would think another major record company will announce support,' he says, 'and you can expect a lot of product announcements. I also think we'll hear from one of the streaming companies that they are going live with MQA. All this will happen this year.'



Brinkmann's new Nyquist DAC is MQA compatible

Affordable audio upgrade

Next-gen AV receiver/loudspeaker package embraces object-based sonics

Onkyo has announced a new HTiB (Home Theatre in a Box) system aimed at buyers looking for an inexpensive way of creating a Dolby Atmos and DTS:X-compatible home cinema setup.

Scheduled to hit the UK in August, priced at just £900, the HT-S7805 package consists of the brand's 7.2-channel HT-R695 AV receiver and HTP-678 5.1.2-channel speaker system. The latter marries two SKF-693 Dolby Atmos-enabled front speakers (with integrated height speakers) with two SKR-950 surrounds, the SKC-591N two-way centre speaker and the SKW-658 active 80W subwoofer.

The HT-R695 receiver offers eight HDMI inputs (with HDCP 2.2 support offered on three of them), and native support for online services such as Spotify and TIDAL. Meanwhile, multiroom functionality is provided by FireConnect compatibility as well as a dedicated Zone 2 DAC and speaker outputs. Sonic fettling is delivered by Onkyo's AccuReflex auto-EQ technology.
uk.onkyo.com

The L/R speakers house upfiring drivers for Atmos/DTS:X



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Extras...

Small items that could make a big impression...

The Curve



Specialist cinema seating can be a pricey addition to any movie den, so why not try something a bit cheaper and even more comfy? Described as 'the ultimate bean bag' Pouf Daddy's body-hugging The Curve lounger is available in denim, linen or velvet finishes and will set you back £170 filled, or £140 for just the cover.

The Art of Disney's The Jungle Book



Titan Books may be an old hand at these '*The Art of...*' film tie-ins, but that doesn't mean that it's lost its ability to impress. This look at the making of Disney's recent live-action remake of *The Jungle Book* is a prime case in point, balancing its lavish artwork with an in-depth exploration of the technology used to bring the film's cast of animals to life. Pick up a copy for £30.

Over the Moon...



Movie-mad apparel corp Dark Bunny Tees has launched a range tied into Duncan Jones' sci-fi flick *Moon*, with approval from the director himself. The limited edition line-up consists of four items: an officially-licensed 'Sarang Table Tennis Association' T-shirt, plus a mug, messenger bag and T-shirt bearing the legend 'Wake Me When It's Quitting Time'. The four items are available separately, or in a money-saving bundle priced £68.

Star Wars nabs Blu crown

The Force Awakens ousts *Skyfall* as the UK's fastest-selling HD platter

Disney's blockbuster *Star Wars: The Force Awakens* has smashed UK disc sales records after going on sale in April, leading industry analysts to repeat claims that consumers aren't yet turning their backs on physical media.

The sci-fi flick, directed by J.J. Abrams, sold a stellar 531,949 Blu-ray copies in its first week on sale, beating out the 2013 release of James Bond movie *Skyfall*, which shifted 522,000 copies in its initial seven days. Combined Blu-ray and DVD sales for *...The Force Awakens* reached more than 1,240,000, equating to around £15m flowing into the coffers of Disney and retailers.

It's also become the fastest-selling *Star Wars* movie in the UK, beating *Episode 1: The Phantom Menace* to secure the top spot.

Joining its impressive retail figures were high sales of other big titles in the first quarter of 2016, including *The Hunger Games: Mockingjay – Part 2* and *Spectre*, leading to an upsurge in the home entertainment market, according to the British Association of Screen Entertainment (BASE).

'The halo effect of having such huge hits in Q1 and the early arrival of Easter meant that cumulatively the top ten titles in Q1 2016 drove 35 per cent more volume and 22 per cent more value than in Q1 2015 on DVD and Blu-ray combined,' it reports.

Furthermore, Blu-ray itself is enjoying a rise in popularity, at least as far as new release titles are concerned, growing by year-on-year volume around 17 per cent.



Liz Bales: 'The leap in Blu-ray consumption shows that consumers are willing to pay a premium for the best-quality experience'

Says Liz Bales, BASE's chief executive: 'The huge leap in Blu-ray consumption shows that consumers absolutely value the content and are willing to pay a premium price for the best-quality viewing experience at home.'

HMV strikes back

HCC readers will know that *Star Wars: The Force Awakens* was hard to escape when it launched on Blu-ray and DVD, being heavily promoted (often with innovative stands) in shops, supermarkets, petrol stations and even dentists' waiting rooms (okay, maybe not the latter). And UK high street retailer HMV didn't get caught short either, with some of its geekier store workers dressing up in *Star Wars* costume for 'photo ops' with disc-buying customers.

Meanwhile, the film, music and gaming stalwart, rescued from administration in 2013 by investment company Hilco, has good news of its own, with an increase in sales meanings it is now the UK's second-biggest entertainment retailer. Latest figures show the company has a 16.9 per cent market share, now ahead of Tesco (16 per cent). Amazon still leads the way with a 22 per cent share, although the online seller saw its sales decline in the past year.











In-store promotions helped ...*The Force Awakens* break sales records on disc



This month's top 10 news stories in handy, bite-sized chunks...



News x10

1 Game on with TPVision

TPVision has partnered leading online gaming company GameFly to bring a selection of premium titles to selected 2015 and 2016 Philips smart TVs. A choice of 60 titles will initially be available to stream, including marquee games like *Batman: Arkham Origins*, *F.E.A.R. 3* and *WRC4*. Fifteen-minute trials are offered before a monthly subscription is required, and users will need an 8Mbps internet connection for HD gaming (or 4Mbps for SD), plus an XInput gamepad.

2 LG's Q1 results

LG Electronics has divulged its first-quarter 2016 financial results, and revealed that its Home Entertainment division's reported revenue of $3.6bn is down 2.3 per cent year-on-year. However, there's been a growth in demand for OLED screens. Natch.

3 Invading the Hall of Fame

Classic 1978 arcade shooter *Space Invaders* has been inducted into the World Video Game Hall of Fame. Joining it this year are *Sonic the Hedgehog*, *The Legend of Zelda*, *The Oregon Trail*, *GTA III* and *The Sims*. The games will become permanent exhibits at The National Museum of Play at The Strong in Rochester, New York.

4 Improve your viewing

Picture processing specialist DVDO has launched a new video scaler designed to upscale SD and HD sources to 4K resolution. Priced around £275, the dinky iScan Mini also includes video setup and adjustment tools.

5 Digital to overtake physical?

Despite the *Star Wars* effect (see opposite) research published by Strategy Analytics predicts that Britons are finally about to start spending more on streaming subscriptions and film/TV downloads than on DVD and Blu-ray purchases. The boffins reckon 2016 will see a massive swing, with £1.31bn spent on digital purchases (a huge 23.7 per cent rise), compared to £956m on DVD/BD (a decline of 16.3 per cent). It would be the first time UK DVD/BD sales fall below £1bn since 1994.

6 Performance guaranteed

Vivitek says that it is 'underlining its commitment to both cost of customer ownership and the environment' with the introduction of a five-year full-coverage warranty for all of its current ultra short throw projectors sold during 2016. Point your browser at www.vivitek.eu for more information.

7 Arrow targets downloads

Fan-favourite Blu-ray label Arrow Video has taken its first steps into the world of digital downloads. The company has made a large selection of films available for download in HD through iTunes and Amazon.co.uk, including *Time Bandits*, *The Strange Case of Dr. Jekyll and Miss Osbourne*, *Withnail & I* and *Hellraiser*. The range even includes some out-of-print Blu-ray titles such as the *Stray Cat Rock* series and *Hell Comes to Frogtown*.

8 Hi-res appreciation

High-end multiroom marque Bluesound has had its range of wireless speakers and digital music players certified as HRA (hi-resolution audio) by the Japan Audio Society, essentially meaning you can feed them a FLAC file without fear.

9 CEDIA gets new Chair

Giles Sutton, the MD of London-based integration firm James + Giles, has been appointed the new Chairman of CEDIA EMEA's Volunteer Board of Directors. Sutton takes over from Kris Hogg, after a six-month term serving as Vice Chairman.

10 Deadpool breaks records

Comic book blockbuster *Deadpool* has become the fastest-selling superhero film on Digital HD, selling 1m units in its first week on sale in the US. According to data from cross-platform measurement company comScore, the film also holds the record as Twentieth Century Fox's best-selling Digital HD release. We imagine the studio is hoping for a repeat performance when *Deadpool* hits Digital HD (and DVD, BD and Ultra HD BD) on this side of the Atlantic on June 13.



Premiere...

What's happening in the world of TV and films...

Panda finds new home



It seems that NBC Universal has decided what to do with all of the cash it made last year from *Fast & Furious 7* and *Jurassic World*. The Hollywood giant has just splashed out a whopping $3.8bn to acquire DreamWorks Animation, the home of *Shrek*, *Kung Fu Panda* and *How to Train Your Dragon*.

Animation Blues

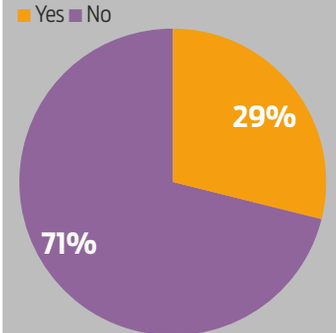
In other animation news, Dan Ackroyd and Judy Belushi (John Belushi's widow) have joined forces with *Bob's Burgers* creator Bento Box Entertainment to work on a *Blues Brothers* primetime cartoon . Well, at least it can't be any worse than *Blues Brothers 2000*, can it?

Deadly dolls to return

Here's some good news for fans of killer doll movies: *Bone Tomahawk* writer-director S. Craig Zahler has been hired to write the script for a new take on the 1989 Charles Band flick *Puppet Master*. The reboot is currently going under the title *Puppet Master: The Littlest Reich*.

We asked...

Are you planning on buying a new projector or TV in order to make the most of the Summer of Sport?



Results from www.homecinemachoice.com
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Height of madness

High-Rise → StudioCanal → Region B BD & R2 DVD

Directed by Ben '*Kill List*' Wheatley, this energetic thriller (based on a novel by J.G. Ballard) stars Tom Hiddleston as a doctor who moves into a luxury tower block on the outskirts of London, just in time to witness tensions between the lower and upper floors of the building spiral violently out of control... *High-Rise* will loom large on Blu-ray and DVD on July 18 where it will be accompanied by a chat-track featuring Wheatley, Hiddleston and producer Jeremy Thomas, a *Bringing Ballard to the Big Screen* promo featurette and 20 cast and crew interviews.







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Face to Face

Topics of discussion on the *HCC* Facebook page

On the imminent sequel Independence Day: Resurgence



It's interesting. The original had a cheesy ending; this looks more manga. This will be the last trailer I'll see till the movie comes out. I saw the first trailer watching *Deadpool*. I tend to avoid spoilers as much as possible now so as not to spoil the movie. Based on these trailers it should give *Batman v Superman* a run for its money..
Mike Short

It looks incredible, hope it's made in 3D?
Steve Michael Clark

Unfortunately, it's a 2D conversion.
Home Cinema Choice

What you're watching on your home cinema...



After watching *Fast and Furious* 1 to 4 last weekend, I guess it'll be 5 to 7 this weekend!
Steve Old

Deadpool via US import. 4K Ultra HD goodness in Dolby Atmos.
Paul Lissemore

I'm playing *GTA V* on my PS4.
Michael Heard

Captain Americaaa!
Zahoor Hussain

Nothing. I've had to send My BenQ W1070+ projector out for repair. Going to see/hear film music composer Brian Tyler live in concert in London, so will just have to play movies in my head...
Patrick Peeters

Lucio Fulci mini season: *The Black Cat*, *The Beyond*, *The City of the Living Dead* and *Zombie Flesh Eaters*.
Alan Hoare

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Back of the 'net

Trailers, technology and more to check out on the web



Lean, mean orc-killing machine

Ever wondered how many Orcs, Goblins and Trolls everyone's favourite arrow-firing, shield-surfing, dwarf-tossing Elf slaughters during Peter Jackson's Middle-earth movies? Thanks to the Auralnauts' superb arcade game-inspired *Legolas Kill Count* video you can find out at last.
YouTu.be/g0WDfNKX0Os



You WILL want to buy Blu-ray...

'A freakin' awesome picture!' and 'Sound that will blow the roof off your living room' – just two phrases that Universal Studios thought apt to help advertise the Blu-ray format in this video. Interestingly, it dates to 2009, fully three years after the discs and players first hit shelves. Perhaps we were slow learners...
YouTu.be/Kc3C5Lq3i9Q



Take a tour

US home cinema fan Gold Plated Cheese (probably not his real name...) hosts this lengthy (and slightly shaky) video that guides you through his very cool theatre room, which includes six subwoofers, three rows of seating, a 140in screen, popcorn machine and film posters built into the wall.
YouTu.be/ddb1L7KHsg0



Back to the stars

Ahead of its July 22nd cinema release, Paramount Pictures has unleashed a second trailer for sci-fi sequel *Star Trek: Beyond*. Perhaps stung by the reaction to the first, joke-heavy teaser, this is all serious dialogue, epic score and sweeping vistas. Which makes us very excited.
YouTu.Be/Tvq3y8BhZ2s



Why so serious?

Holy Bat-toons! Based on Alan Moore's celebrated graphic novel of the same name, *Batman: The Killing Joke* will be the first R-rated DC superhero animated movie when it lands on DVD and Blu-ray in the US on August 2. Check out the first official trailer to see why comic books fans are salivating.
YouTu.be/bW22Hidj7LA



Check your 'flix speed

Tardy broadband speeds are a TV streamer's nightmare, so global telly giant Netflix has launched a system checker that is free, unblighted by adverts, and oh-so-simple to use, whether from a desktop computer or mobile device. Handy for checking coverage around the house to find Wi-Fi notspots.
https://fast.com

Smarter cabinets

Loewe Spectral AV furniture → www.loewe.tv



AHOY THERE
Historical drama *In the Heart of the Sea* sails onto BD, p102

High-end AV marque Loewe has joined forces with fellow German brand Spectral to produce a range of cabinets tailor-made to match its minimalist flatscreens. Three models are available – Rack 56, Rack 110 and Rack 165 – with the names reflecting the width (cm) of the unit. As well as the usual features (adjustable shelves, cable management, etc), the cabinets hide built-in Qi inductive charging tech to wirelessly charge compatible gear and motion-sensitive internal LED lighting.

BACKGROUND IMAGE: SHUTTERSTOCK.COM/NEXUS 7

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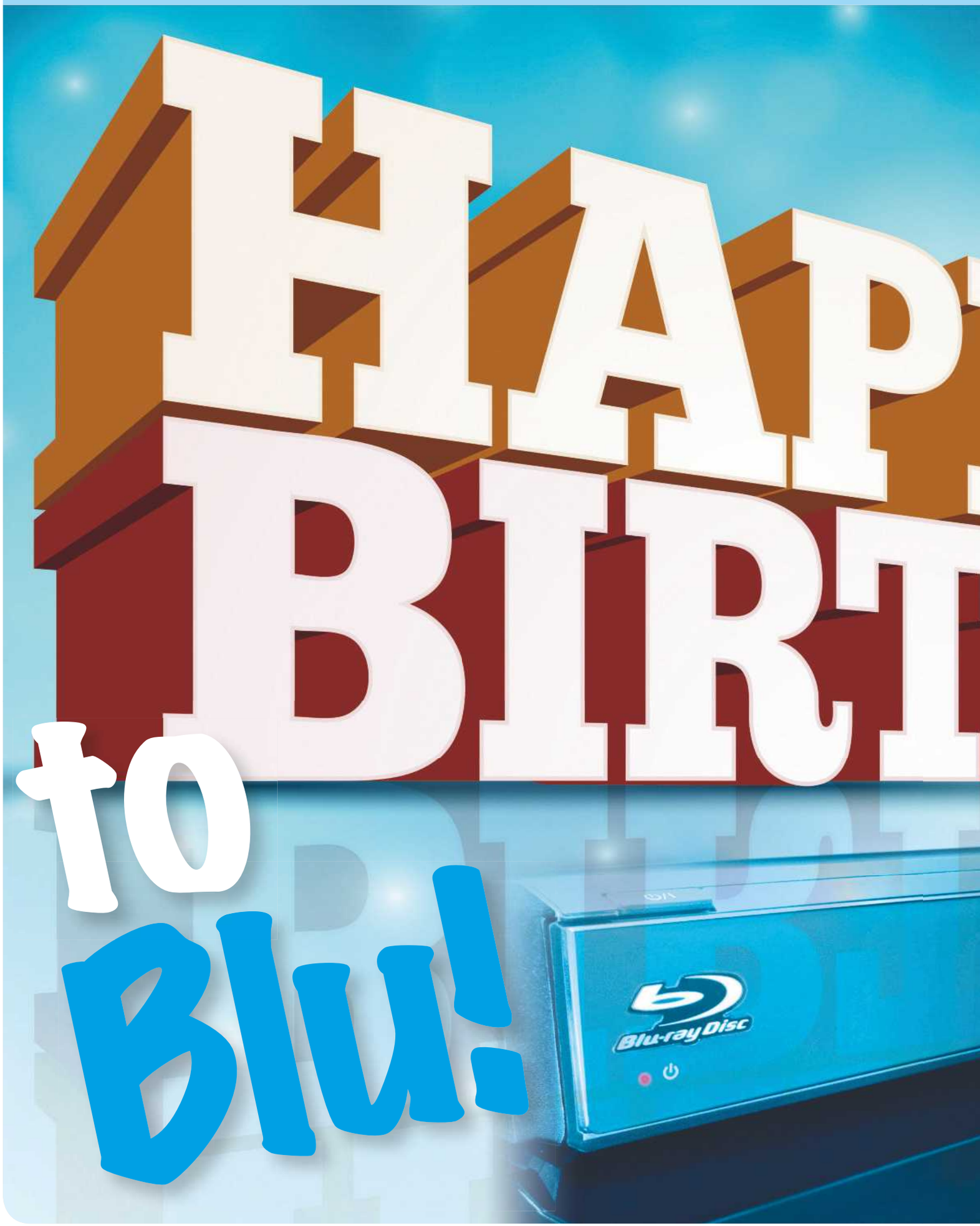
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***HCC* first reported on the new Blu-ray format in 2001**

June 2016 marks the 10th anniversary of Blu-ray. **Mark Craven** recalls the format's origins, battle for success and wonders where it goes from here

IT'S LATE 2006, and I'm on a couch in a blacked-out viewing room, marvelling at a Blu-ray. I can't remember what title it was. I can't remember the screen either. I can remember the player, though: a first-gen Panasonic DMP-BD10, then priced at a wallet-worrying £1,300. And I was marvelling not at a movie, but the disc's menus, ogling super-sharp images and pixel-perfect text. Somewhat hard to believe now, with throwaway decks available for less than £50 and HD ubiquitous, but this was the effect Blu-ray had on people. 'It only takes one look to realise how far you can go beyond DVD,' said an early commercial for the format. And it wasn't lying.

Ten years on and Blu-ray is the *de facto* medium for home cinema owners. DVD still strides on, digital streaming and TV platforms have their place, but it's Blu-ray we turn to first. It offers the best image and sound quality, a vast catalogue of new and old releases, and doesn't stop working when your internet connection goes down. It's difficult to imagine our AV lives running without it.

As it was June 2006 when Blu-ray officially launched, it's now reached its 10th birthday. A decade doesn't make it old in format terms, but considering some early teething troubles, not to mention battling those who think physical media is old-hat, we reckon it's worth lighting a few candles for....

Lasering in on quality

The history of Blu-ray begins much earlier than 2006, of course. The format had a long gestation, beginning around the dawn of the new millennium. And it wasn't about movies back then.

The format – a joint venture between Sony and Philips – broke cover in 2000, then going by the name of DVR-Blue. DVR because it was intended as a high-spec recording medium, Blue because it employed a blue laser. HDTV was already a going concern in its native Japan, and the AV giants were seeking a solution to the problem of recording HD broadcasts. DVR-Blue discs, courtesy of the shorter wave lengths of blue lasers (405nm compared to 650nm for DVD and 780nm for CD), could pack in unheralded quantities of data; the first prototype used a single-layer 22.5GB platter.

HCC's creator Steve May was in Japan at the end of 2001 for a briefing from Sony about its new toy, and reported that the innovation was seen as a way for the brand to sidestep the recordable DVD war (+RW/-RW/RAM): 'Every major manufacturer has been investigating such high-density recording technologies, but all are casting a wary eye over Sony's R&D facility in Shinagawa, Tokyo.'

At the time, the DVR-Blue project was under the guidance of Sony's Yukinori Kawauchi. Telling *HCC* >





The HD DVD format proved a thorn in Blu-ray's side until its death in 2008

that there was no 'introduction timings' to announce, Kawauchi explained that the starting point was 'to be able to record at least two hours of hi-definition,' something that would have required the equivalent of five recordable DVDs or 34 CD-Rs. At the time, DVR-Blue discs came in a protective caddy.

While the notion that this high-quality recording format might one day rewrite the home cinema rulebook seemed pretty fanciful in 2001, it's clear that Sony knew it had greater potential. 'Hi-def TV recording is the original road we are exploring,' revealed Kawauchi-san. 'However, we believe the enhanced disc capacity can be utilised for many other applications. With a capacity five times that of a DVD, we could offer unique software.' But there was a caveat: 'We don't expect much format support during the first few years. It will not be like the introduction of DVD and DVD software.'

In that regard, the Sony boffin was right. In the following years, there were refinements of the format and a Japan-only hardware launch. The DVR-Blue moniker was retooled as Blu-ray Disc in 2003, the same year that Hitachi, LG, Panasonic, Pioneer, Philips, Samsung, Sharp, Sony and Thomson established the Blu-ray Disc Founders collective – a forerunner to the Blu-ray Disc Association (BDA) – and Sony sold the first Blu-ray recorder, the BDZ-S77, and compatible physical media.

It was around this time that UK tech-hedz began to sit up and take notice. Japanese innovations had a habit of taking hold and going global. HD broadcasts in the UK were still some time away, but the prospect of hi-def movies from disc (not the D-Theater hi-def VHS solution pushed by JVC) seemed likely, despite no official word from any movie studio even after the launch of that debut recorder. After all, hadn't the same thing happened with DVD?

Sony's BDZ-S77 Blu-ray recorder hit Japanese stores in 2003



Of course, when Blu-ray eventually launched it wasn't the sole focus of AV enthusiasts desperate to give their HD TV meaningful content. A rival format had caused a stir, and it managed to beat Blu to shop shelves by a couple of months.

The format was HD DVD, and again it didn't arrive out of the blue. First mooted in 2002 by the DVD Forum, it sought to overcome some of the perceived limitations of Blu-ray (those damn disc caddies, for one thing, and the manufacturing costs required from the whole new technology). And it had movie studio support from the outset – Warner Bros was its driving force.

> 'Blu-ray is the *de facto* medium for home cinema owners – try imagining your AV life without it...'

'The attraction of the Warner proposal is that DVD replication plants worldwide could move to duplicating HD DVDs at minimal costs, and new DVD players compatible with the HD DVD specification could be economically brought to market – there would be no requirement for HD DVD players to be recording devices,' *HCC* reported after the CEDIA Expo in Autumn 2002.

Long before the format war that would befuddle consumers, a tech war was bubbling away.

Lift off!

Skip forward to 2005, and the war is positively raging with both tech brands and movie studios taking sides, or choosing to sit on the fence, ahead of the

Defining moments of hi-def

The landmark releases of the Blu-ray format so far

Casino Royale

Released in March 2007 following its November 2006 cinema outing, for many this was the first must-own Blu-ray disc, benefitting from an MPEG-4 AVC encode, as opposed to MPEG-2, that brought digital delights from director Martin Campbell's 35mm photography. Made by Sony Pictures/MGM, they even snuck a BD disc into the movie...

Watchmen

Zack Snyder's fan-fave comic book flick debuted on BD with Maximum Movie Mode, an info-packed 'visual commentary' that made old picture-in-picture bonus features look like something from the Stone Age. Blu-ray had been teasing such awesomeness for a while. In 2009 it arrived.

Alien Anthology

In 2010, Fox released this superb boxset for its popular sci-fi/horror franchise, treating *Alien*, *Aliens*, *Alien*^{3} and *Alien Resurrection* to new hi-def masters (including an opinion dividing refresh of *Aliens* overseen by director James Cameron) and two discs' worth of extra features, including more than 12,000 images.



impending Blu-ray and HD DVD launches. In the Blu corner on the hardware side were the likes of Sony and Panasonic, with Twentieth Century Fox and Disney among the studios providing exclusive backing; in the HD DVD camp stood Toshiba, Intel, Microsoft and NEC, with Warner Bros, Paramount and Universal weighing in with software – although both the latter were at times supporting both.

HCC spoke with Panasonic's Toshihiro Sakamoto in late 2006, and he expressed surprise that there was even a format war ongoing, admitting that those in the Blu-ray camp thought the fight would be done and dusted by Christmas.

'I was hoping that by the end of this year there would not be a format war. There have been lots of misunderstandings about Blu-ray, but that's now been taken care of. For some reason, people in the industry and media have believed that HD DVD is less expensive to manufacture than BD, but that is totally wrong.'

Interestingly, he still pitched it as a recording format. 'In the future you will see BD recordable media with up to eight layers. TDK has already announced six-layer, 200GB BD media. With that kind of capacity, perhaps you don't need a hard disc drive to record TV programs anymore...'

Perhaps a look at the first tranche of Blu-ray releases would have helped explain why the format hadn't been declared instantly victorious. The initial wave of discs, released on June 20, 2006, failed to really whet the appetite. Sony, still first when it came to pushing the format, opened the market with the likes of Adam Sandler rom-com *50 First Dates*, vampish sequel *Underworld: Evolution* and Vin Diesel actioner *xXx*. By that time, HD DVD owners could already see the likes of *Unforgiven*, *Apollo 13*, *The Last Samurai*, *Full Metal Jacket* and *Goodfellas* on their disc shelf. And without region coding, they could be imported from anywhere.

Muddying the waters for consumers were those studios that supported both formats, issuing inventory for each. And there were manufacturers, such as LG, that briefly espoused the idea of combi players that would spin both hi-def variants, releasing the BH100 (aka Super Multi Blue) in 2007. The situation reached its peak of silliness when Warner announced a Total Hi-Def solution, cramming HD DVD and Blu-ray versions into a single case.

As the war rumbled on, and consumers bore the brunt (dedicated technophiles simply adopted both formats), something had to give. And when it did, it did it in style. The CES show of 2008 saw Warner abruptly announce it was pulling its support for HD DVD, favouring Blu-ray only, leaving HD DVD stalwart Toshiba to effectively can its press conference a couple of days later. Within weeks, the format was deemed dead by industry watchers, and software and hardware releases quickly dried up.

Good news for consumers, surely? Not everyone thought so. HD DVD had offered more affordable hardware and a stable specification from day one. Blu-ray, on the other hand, had become mired in controversy over developing standards and disc authoring techniques. It was time for the format to get its act together...

Get with the profile

Any Blu-ray player you buy today (ignoring the new breed of Ultra HD disc spinners, of which more later) >

Sony PlayStation 3: Blu-ray's battler

Did the hi-def gaming console win the HD DVD v Blu-ray war?

It's widely accepted that Sony's PlayStation 2 console was key to the success of DVD. The machine, which happily played regular DVD discs as well as games titles, reached around 10 million sales within a year of its launch, putting a DVD deck into homes around the world. Its PlayStation 3 successor, it was hoped, would do the same for Blu-ray.

Did it? In terms of sheer sales, the PS3 couldn't match the PS2 for worldwide success. Competition was stronger – when it launched in 2000, the PS2 only had to battle SEGA's ill-fated Dreamcast; the PS3 went joypad-to-joypad with both Microsoft's Xbox 360 and Nintendo's Wii. The console sold well, but couldn't consider itself undisputed king of the hill.

Regardless, the PS3 still acted like a Trojan Horse for Blu-ray, bringing BD playback to millions of households, and at a much lower cost than early players. An HD DVD drive was an optional accessory for Microsoft's Xbox 360, but with the Sony console, HD disc support was in-built. By early 2008 – the time when Warner quit the HD DVD business, Blu-ray could claim a global player base of 10 million. Sales of HD DVD decks were around a tenth of that. Ultimately, it left studios looking to back the most 'popular' format with a relatively easy decision.





Cloudy with a Chance of Meatballs

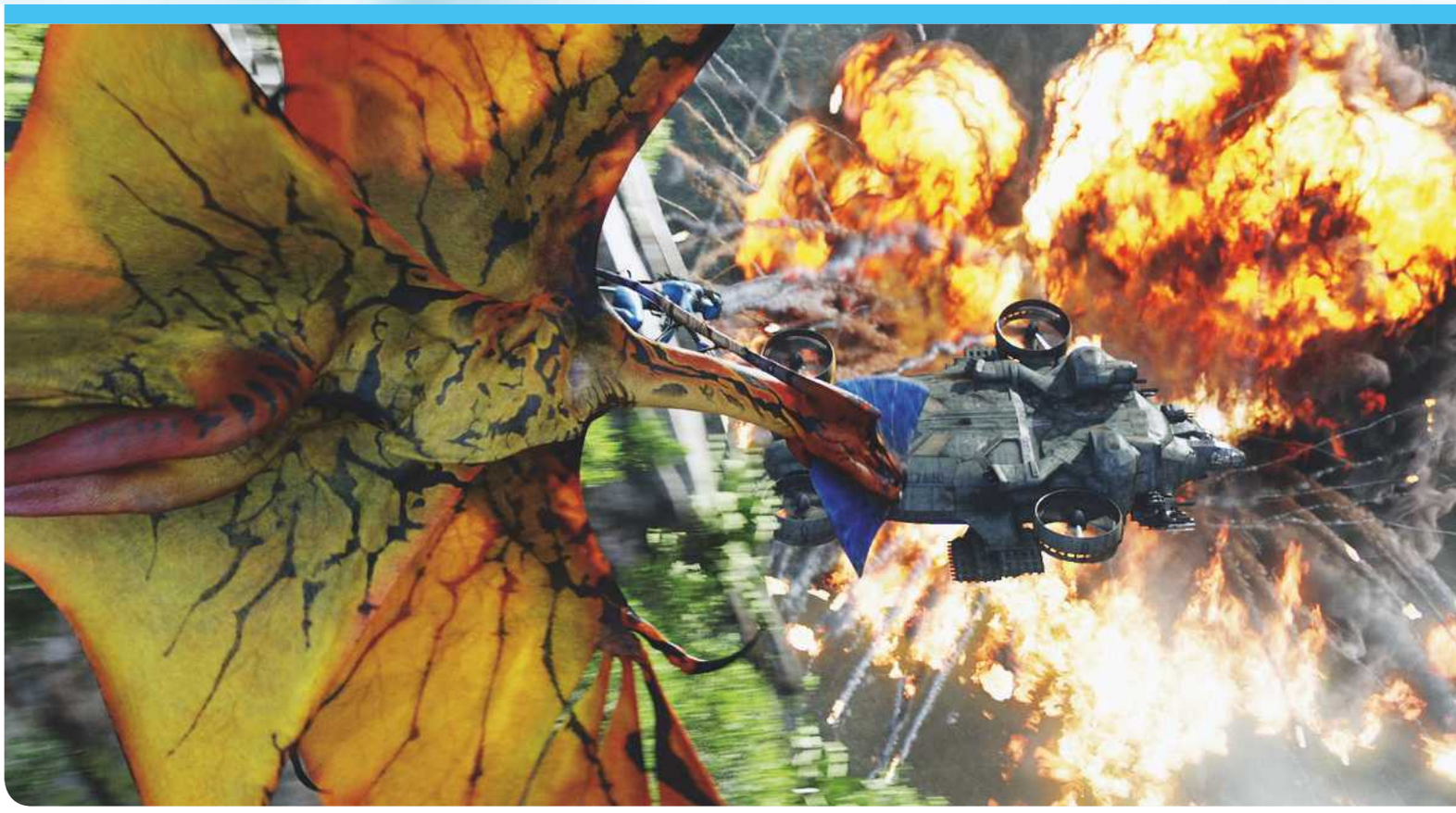
Sony's CG animation warrants a place in history not because of its slick, fast-paced narrative, but because it was the first commercially available 3D Blu-ray disc (in 2010). Add in the likes of *Monsters vs Aliens* (exclusive with Samsung hardware) and *Ice Age: Dawn of the Dinosaurs* (Panasonic exclusive) and it made all 3D early adopters 'toon addicts.

Lawrence of Arabia

A jewel in the crown of Sony Pictures' back-catalogue, this historical epic enjoyed a peerless Blu-ray release in 2012, with Sony utilising a new 8K scan and the knowhow of its film restoration team – led by Grover Crisp – to deliver the picture quality that AV enthusiasts felt David Lean's film (lensed in 1962 on 70mm Panavision cameras) deserved.

Game of Thrones

TV material has been well-served on Blu-ray (give or take the occasional misfire – think *The Simpsons* no longer getting an HD outing) but HBO went the extra mile last year by re-issuing the first four seasons of hit fantasy show *Game of Thrones* on Blu-ray with a next-gen Dolby Atmos mix. It'd be nice to see other companies following its lead.



The Blu-ray format was quick to respond to a 3D movie trend kickstarted by James Cameron's *Avatar*

supports BD Profile 2.0. Introduced in 2008, this made it mandatory for Blu-ray players to have an internet connection, granting compatibility with BD-Live. This was seen as a key development in the format, introducing online functionality to the movie-watching experience. BD-Live promised trailers, live commentaries, games and more. In hindsight, it seems laughable that BD-Live was much of a cause for concern – film fans quickly realised the platform wasn't offering anything worth getting excited about. Yet at the time, it made existing non-Profile 2.0 players – those that were either Profile 1.0 or Profile 1.1 (which introduced local memory and picture-in-picture functionality) appear obsolete. Which wasn't what anyone wanted to hear having spent over £1,000 on a deck.

The Profile debacle damaged BD's appeal in its early years, but perhaps not as much as iffy software. The format specification, a result of its turn of the millennium origins, supported (and still does) different encoding technologies – the original MPEG-2 codec was joined by MPEG-4 AVC and VC-1 in 2004. While the latter two more efficient compression technologies are now widely used, the inferior MPEG-2 was employed by studios for initial releases, and while AV fans were impressed by Blu-ray's image quality, those in the know knew it could be better.

Sonically, too, Blu-ray had issues to overcome. The format was always marketed as not just about image quality – lossless audio was also a selling point, with LPCM a mandatory hardware spec. Yet studios often chose to implement the less space-hungry (but format optional) Dolby TrueHD or DTS-HD MA codecs, and not all decks would decode these out of the box.

Still, with HD DVD out of the picture, manufacturers coalesced around Blu-ray and the format's hardware boom began. As mentioned, first-generation players retailed for over £1,000, but as quickly as Autumn 2008 we were auditioning decks, such as Samsung's BDP-1500, that could be bought for under £200 – a sure sign that the format was well on its way to becoming mass market. And as more AV marques joined the push, there was an explosion in choice and the birth of a high-end BD player market that still exists today. Decks such as Denon's DVD-A1UD and Pioneer's BDP-LX91 offered heavyweight build quality and audiophile sensibilities for those prepared to spend big on their cinema room. Meanwhile, the ever-popular home-theatre-in-a-box market shifted from DVD to Blu-ray, providing easy affordable upgrades to cash-conscious buyers.

Adding an extra dimension

Summer, 2009. HD DVD is a memory and Blu-ray discs are flying off shelves. Home cinema fans have either already upgraded to a hi-def TV or projector, or are busy saving the pennies. All is good in the world of BD. And then along comes James Cameron.

Avatar, the director's first film since 1997's *Titanic*, was released in 3D at cinemas across the globe and shattered all box office records. A format that had previously mostly found favour in kid-friendly 'toons and horror flicks now went mainstream. Blu-ray had >

Denon's DVD-A1UD: a flagship universal player that brought audiophile refinement to Blu-ray playback



Missing in action

The movies that we still want to debut on Blu-ray...



Is *The Abyss* floating around on Blu-ray somewhere in the 20th Century Fox vault?

The Abyss

James Cameron's aquatic sci-fi/disaster isn't his greatest movie, but has now assumed legendary status simply because you can't buy it on Blu-ray. Rumours of a 2014 release from Fox (to coincide with its 25th anniversary) proved false, and it's still unclear when, if ever, it will surface. An HD master does exist, however, used for TV broadcasts.

True Lies

Another mid-period Cameron flick unloved by Blu-ray, although the clamour to have this released on the format isn't quite as loud as it is with *The Abyss*. Again, the rights reside with Fox, so anyone desperate to see secret agent Harry Tasker (Arnold Schwarzenegger) battle terrorists while saving his marriage should contact them and have a moan.

After Hours

An oft-overlooked Martin Scorsese movie (because it's a black comedy that doesn't star Robert De Niro...) that remains unavailable, and not one that we expect to see appear unless a boutique label can grab distribution from rights-holder Warner.



Bill & Ted's Bogus Journey

1989's *...Excellent Adventure*, recounting the japes of heavy-metal loving high-schoolers Bill and Ted, was released on BD in the UK in 2014, after a 2012 US issue. Yet the 1991 sequel, which sees the heroes being killed by evil robot doppelgangers and having to save the day despite being dead, is still DVD only. Bogus!

The Limey

Steven Soderbergh's hard-boiled revenge drama – starring Terence Stamp as an English ex-con touching down in Los Angeles to find his daughter's killers – failed to light up the box office like his previous hit *Out of Sight*. Maybe that explains why it's not seen the Blu light of day. A shame, as it's a superb little thriller.

Scarface (1932)

Howard Hawks' seminal gangster flick – remade in 1983 by Brian De Palma – has been deemed worthy of preservation by the US National Film Registry, but that hasn't extended to Universal Pictures releasing it in hi-def, instead featuring it in SD as an extra on the Blu-ray of the remake.

War of the Worlds (1953)

A huge hit upon its cinema release, distribution rights to this '50s adaptation of H.G. Wells' sci-fi novel lie with Paramount Pictures. The studio is yet to release it on HD disc, although 'net chatter suggests a master has been struck and possible arguments over whether to remove visible wires (part of its SFX) are to blame for the hold up.

The Black Cauldron

Disney has done wondrous things with its vault titles when it comes to Blu-ray, particularly with its Diamond Edition releases, yet has given the cold shoulder to this 1985 'toon based on the fantasy novels of Lloyd Alexander. Darker than the usual Disney fare – maybe that's the reason.

Wallace and Gromit: The Curse of the Were-Rabbit

Any delay in releasing Aardman Animations' 2005 outing for its much-loved duo on Blu-ray may stem from rights complications – the stop-motion maestro's partnership with DreamWorks ended a year after the movie debuted.

Pat Garret and Billy the Kid

Sam Peckinpah's Western exists in three different versions due to differences between the director and studio MGM. There's a DVD release that bundles the prints altogether, but a Blu-ray version is long overdue.



Wallace and Gromit have a Blu-ray curse...

to catch up, and did so quickly. By the end of the year, a specification change had been enshrined by the BDA, endorsing MVC encoding. Handily, considering previous uproar about obsolete hardware, the new 3D Blu-ray players would support 2D discs. Yes, you're old deck was now consigned to AV history, but you didn't have to bin your entire collection, too.

PlayStation 3 owners were the lucky ones. The processing power and HDMI stage of the existing console meant it could be switched to support 3D Blu-ray by virtue of a 2010 firmware update. This just helped to further cement the idea that Sony's console was the hidden weapon of Blu-ray, able to take on all challenges and overcome them.

While 3D Blu-ray will ultimately be written off as an esoteric format, it proved that the BDA could respond to Hollywood and breathe fresh life into its invention without ripping up the spec sheet.

It was around this time, too, that studios began to make the most of the format's potential, scouring back-catalogues to issue high-quality releases for cherished titles. Soon Blu-ray became the friend of serious film collectors, enabling them to replace their LaserDisc and DVD versions. Snooty and proud of it, many home cinema owners simply weren't interested in the likes of *Into the Blue* or *Stealth*

> 'With 4K HDR discs now hitting shelves, the future of Blu-ray looks bright – literally'

– they wanted the best of Spielberg, Scorsese, Hitchcock and Lean. Studios got the message – *North By Northwest* (2009), *Bridge on the River Kwai* (2010), *Taxi Driver* (2011) and *Jaws* (2012) are highlight releases from BD's middle age. Now (with some notable exceptions – see Missing in Action, p25) the Blu-ray market is expansive, catering for all tastes, and sensibly priced. Want the latest *Star Wars* flick with a pristine transfer for £10.99? Not a problem. After a limited edition release (perhaps with an accompanying booklet) or your favourite Italian slasher flick? Independent labels such as Eureka! Masters of Cinema, Criterion Collection, Arrow Video and 88 Films are your friends.

Ultra HD Blu-ray: the final format

So where are we now with Blu-ray, ten years since it birthed? Well, the future looks bright – literally.

New for 2016 is Ultra HD Blu-ray, delivering movies at 4K resolution (3,840 x 2,160) and usually – although not always – with an HDR master. The format landed only weeks ago, with new players from Panasonic and Samsung joined by discs from studios including Sony Pictures, Warner Bros and Twentieth Century Fox. Again, it took time to engineer, with both Netflix, Amazon and even YouTube stealing a march on it by providing content to 4K flatscreen owners.

It's an exciting development, and early adopters are this time around thankful that region-coding has been jettisoned, hardware isn't super-expensive and there's no rival format already out there to scupper



The maturing Blu-ray market brought long-awaited HD versions of classic titles, including Spielberg's *Jaws*

things. Yet neither is Ultra HD Blu-ray perfect. Again, there's been an almost 'will this do?' feeling to the catalogue of titles chosen – probably no one wanted to watch *The Smurfs 2* in hi-def, let alone in Ultra HD with zinging highlights and wide colour. Furthermore, the open-ended nature of the Blu-ray specification means that different flavours of HDR may become an issue, leading to an eventual two-tier experience with HDR 10 ranking below the likes of Dolby Vision. And, lastly, the onus is on display manufacturers to conjure up screens that can deliver the best from UHD BD, and it's apparent at the moment that taming the peak luminance the format demands isn't always plain sailing. Perhaps HDR will be the content that pushes OLED technology to ultimate success...

Will Ultra HD Blu-ray deliver the sales figures to rival its HD predecessor? Unlikely, considering the strength of digital services and the continued selling power of DVD and Blu-ray. It's perhaps best thought of as a 21st century LaserDisc equivalent – we'll all get a thrill out of owning it, but don't expect everyone on your street to follow suit.

In its ten years, Blu-ray has already amassed quite a story, and their are other chapters – Pure Audio releases, UltraViolet digital copies – that haven't been touched upon here. Maybe they can feature when we celebrate its 20th birthday...

How best to sum up Blu-ray? Well, if time flies when you're having fun, it only seems like yesterday that I was sat in that blacked-out screening room... ■

4K: The next step in Blu-ray's evolution



Pushing Blu-ray forward since it began

Blu-ray

HOME CINEMA Choice ★★★★★

BDP-93EU

"outstanding value for money"

BDP-95EU

HOME CINEMA Choice BEST BUY

"reference grade kit"

HOME CINEMA Choice BEST BUY

BDP-103EU

"an absolute triumph"

BDP-105EU

HOME CINEMA Choice REFERENCE STATUS

"the most significant evolution of the Blu-ray player since the format was developed"

HOME CINEMA Choice BEST BUY

BDP-103D

"an extra trick up its sleeve"

BDP-105D

HOME CINEMA Choice REFERENCE STATUS

"Blu-ray at its brilliant best"



What's next...?

oppo

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8K TV

China prepares to win the war





Visitors to the first CE China expo got the red carpet treatment (top left); Chinese brands such as Haier, Changhong and TCL (opposite) are leading the country's LED TV boom

Korean market leaders Samsung and LG could soon be eclipsed by mushrooming TV makers from its neighbour, with 8K TVs set for production later this year. **Jamie Carter** reports from Shenzhen

THE FLATSCREEN TV has long been an East Asian soap opera. Plasma displays may have been invented in Japan, but in just a decade the battle for control was wrested away from the Land of the Rising Sun – the HQ of home cinema screens is presently South Korea, whose brands Samsung and LG dominate the UK market and fill our homes with ever-larger models.

However, almost as big are the no-name producers of LCD panels in Taiwan, which mostly supply the Japanese brands like Panasonic, Sony and Toshiba. And with the arrival of 4K, HDR and now 8K, it's China's turn – and that could mean it's game over for the rest.

HCC recently paid a visit to the country, where its tech-centric city Shenzhen was playing host to CE China, a consumer electronics expo run by IFA, the brains also behind the annual Berlin show. Described as the 'Asian counterpart' to the German extravaganza, CE China debuted with over 150 exhibitors. Many of them, it's fair to say, were not UK household names. But they might be in the future.

Seismic shift

Fancy a TV made by a Chinese brand like TCL or Skyworth? How about LeEco, PPTV or Konka? You probably don't right now, but industry analysts believe you will as these brands become bigger, move into new markets and bring 8K tech with them.

At CE China, I caught up with Paul Gray, Principal Analyst at research giant IHS, who filled me in on the scale of change in the TV-making business. 'The amount of panel investment here is amazing. There are 11 active panel fabrication plants, they're digging and building 10 more, and eight more are planned.' Gray believes this signals a major shift. 'This year we'll see China overtake Taiwan, and by end of 2017 Chinese capacity will be on a par with Korea.'

Much of this new business is concentrated in Shenzhen. Just 30 years ago it was a fishing village on the Pearl River Delta; then it was granted Special Economic Zone status in 1980 and a tech manufacturing boom began. Until recently it was the world's fastest growing city, and has a population of around 12m. It makes an apt home for the expo.

Doing business at CE China were some of those panel-makers keen to impress the world with their LCD TVs. 'The TV market is getting harder in China because there are many competitors and the prices are getting lower, so we're looking at overseas,' said Benson, vice president at Express Luck Industrial, a company that has been making LCD panels – mostly for use by other, better-known brands – in Shenzhen for 11 years. 'We make panels for Panasonic and others,' he told me, adding that this constitutes 90 per cent of its business. However, with its own, newly-launched brand Caixun, it's targeting the US, Europe, South America and other parts of Asia.

None of this is unusual for a Chinese LCD maker, but the very biggest Chinese companies – among them Hisense, TCL and Skyworth – are increasingly becoming visible in overseas markets. The largest, TCL (short for The Creative Life), is currently trying to crack the US and European markets. However, it's what happens next that could see these early forays into global markets become a torrent. Because Ultra HD 8K – otherwise known as Super Hi-Vision – will likely be a uniquely Chinese phenomenon.











You might think, rightly, that 4K TVs are yet to establish themselves, but the latest star-gazing predicts 300 million households worldwide will be sitting down to watch one by the end of 2019. That's not a big number on a global scale, but it's well over the number needed for early adopters (you know who you are) to begin thinking about the next big thing. And that will be Ultra HD 8K, which will offer a 7,680 x 4,320 pixel resolution image, a staggering 33.18 megapixels. Compare that to 4K's paltry 8.3 megapixels...

Again, the numbers aren't massive, but IHS believes they'll be a significant amount of these sets in homes come 2019, when it expects 1.4 million worldwide. This figure is tipped to rise to 2.1 million in time for the 2020 Olympics in Tokyo, where host broadcaster NHK plans to film and broadcast in 8K quality, at least to some public screens.

Providing the backbone to this format shift will be low prices. With so many TV-making factories popping up in Shenzhen, production costs are plummeting. As a consequence, 55in panels in 2016 are about the same price that 46in panels were in 2015. That might not sound like good business for China, but it's precisely this sizing-up that will likely bring Shenzhen world domination. And big sizes are made for 8K. 'If 40in is the entry size into 4K, then that should mean that 80in is the entry size for 8K,' says Gray.

So 8K TVs are coming, and quickly. 'We are developing 8K and maybe it will go on sale at the end of 2016, depending on the market,' revealed Benson, although he wouldn't say what size of screen Express Luck is betting on.

That a no-name producer is willing to launch a brand from scratch and make it global shows confidence, but it also demonstrates that the TV business is almost entirely about the lowest price. That perhaps doesn't bode well for OLED, which despite being arguably the finest-quality, most home cinema-centric panel technology ever created, has two problems; it's expensive, and it's manufactured in Korea, not China. Might we see Chinese plants begin producing OLED panels? Undoubtedly, but TVs won't be the target; I'm told that OLED tech is destined for curved in-car screens.

Forward-thinking

Contrary to public perception, China is not just about cheap labour and cheap prices. It has the most early adopting consumers in the world; Ultra HD 8K TVs will get an enormous push next year, and people will buy them.

The demographics for the whole of Asia, which China is primed to supply, also give the 8K era hope. About 28 per cent of the world's middle class – the buyers of luxury goods such as 4K and 8K TVs – lives in Asia, and that's about to double in the next 14 years. However, the clincher for China is possibly less about demographics and more to do with superstition. 'We all know that the number eight in China is connected to good fortune and wealth,' says Gray. 'It's another great marketing tool for 8K TV.'

In the world of TVs, China looks like it has the numbers game wrapped up. If you're a tech freak already considering an upgrade on 4K, then you might find your next TV comes from an unfamiliar brand ■

Shopping in Shenzhen

Where to go to pick up a tech bargain

For AV fans after a peek at the latest tech, the electronics markets of Asia are legendary. Yet while Tokyo's Akihabara district has cult appeal and Hong Kong still boasts cheap prices, it's Shenzhen in south China where the real riches are.

At a busy intersection in Huaqiang Bei you'll find nothing less than the epicentre of global electronics: the legendary 70-storey SEG Electronics Market. Some floors contain finished products, from 'phones and virtual reality headsets galore to demo rooms for home cinema projectors and 3D printers. Others are full of components and cables, circuit boards and screens.

In the suburbs north of Huaqiang Bei, around 90 per cent of the world's electronics are made in numerous super-factories, and this is where they come first. On the lowest eight floors of SEG and in the eight-story Huaqiang Electron World opposite, people are either at work in factory outlet concessions hawking wares, or they're fulfilling orders from around the globe. That cheap HDMI cable you bought on eBay last month from a Hong Kong



seller? It probably came from these vast rooms. Everyone is surrounded by boxes; tiny screws, LED bulbs, cable after cable. Tech-preneurs from across the globe flock here to hunt for components for prototypes, and to kick-start manufacturing. So if you want a taste of the future, Huaqiang Bei is where to glimpse it... and buy a replacement remote for your TV.

Get with the programme

Looking for more than just free-to-air TV? **Team HCC** rounds up the offerings from the UK's main pay-TV providers to see who rules the roost

Virgin Media

THE COMMUNICATIONS GIANT aims to tempt telly addicts with its Virgin TV cable service, which uses the TiVo hardware platform to add a level of intelligence and personalisation to the standard PVR experience.

Cost

Pricing – as with all these services – is flexible. Virgin Media's TV packages start at £10 per month, over an 18-month contract, but this figure applies when taken in conjunction with a Virgin phone line. Get your phone from elsewhere, and TV subscription costs rise. Install and equipment fees also apply, and there are different levels of channel package to choose from. Furthermore, savings can be made if you're also a Virgin Broadband user – speeds of up to 200Mb are available. For an exact figure, go to Virgin Media's website and assemble your chosen package.

Content

Channel bundles offered are More TV, M+, L and XL. Noteworthy channels beyond the usual free-to-air fare include FOX, Sky One and Comedy Central. However, it's only when you sign up to the XL package that HD becomes a major draw. This top-tier subscription offers 49 HD channels; the L model features only 11.

The XL package also bundles BT's Sport channels. Otherwise these are available for an additional monthly sub – as are Sky's Sports and Movies channels. Film fans should consider a sign up to the latter, as Virgin doesn't have movie channels of its own, instead shunting you towards pay-per-view, where titles offered include new blockbuster releases at around £4.50 a pop.

Heavyhitters in the catch-up suite are BBC iPlayer, ITV Player, All 4, Demand 5 and Netflix.

Kit

Where Virgin Media's service scores brownie points is TiVo functionality (which automatically records programmes you may want to watch, fine-tuning its suggestions as it learns more of your viewing habits) and the three tuners on its V+HD box, which allows for three channels to be recorded while you watch something from the HDD. The box is available in 500GB and 1TB flavours – the latter is a better bet for series-linkers.

Multiroom is an option, too, with additional boxes (either a standard V HD or TiVo box) connecting via Ethernet or Powerline.

Verdict

Virgin TV certainly felt fresh when the TiVo hardware was introduced, but that was five years ago now; rivals have caught up in terms of personalised recordings, and we've yet to hear a peep from Virgin Media about any potential 4K channels/content. If you live in a cable area, it's certainly worthy of consideration, but perhaps isn't the standout offering it once was.



The Virgin TV user interface (once red and black) has been given a revamp



Virgin Media's TiVo box packs triple tuners, helping to avoid clashes

Sky

PROBABLY THE UK'S most famous pay-TV provider, Sky now offers a two-tier TV platform, with the new Sky Q system (reviewed on p40) joining the long-running Sky+HD service.

There are numerous difference between the two, but for AV-hedz the most important is that Sky Q is 4K ready, while Sky+HD isn't. Not that there is currently any 4K content available from Sky – it's targeting a launch later this year.

Sky's TV service is delivered via satellite, which the company claims has coverage of around 98 per cent of the UK. Of course, it requires the installation of a satellite dish on your property, which may be a no-go if, for instance, you live in a conservation area. Yet increasingly it's an IPTV proposition too. Hook up a Sky box to your router and it delivers a solid offering of catchup TV, including movies and boxsets.

Cost

For Sky+, there are package options available from £20 per month (the Original Bundle), for a minimum 12-month contract, and with a 500GB PVR. Decide you want the 2TB version and you'll have to pay (£250) for the hardware. And there is a £10 setup fee. Sky Q is pricier, with a basic-level subscription beginning at £44 per month.

You can also get your broadband and landline from Sky.

Content

When it comes to content, Sky has a superior offering if you're prepared to splash out on one of its top-level subscriptions. Long-standing deals with Hollywood studios mean there's a huge selection of movie channels, all broadcast in HD and typically with 5.1 audio. Opt for the Sky Movies bundle (£38 per month) and you'll realise that the film libraries of the likes of Netflix and Amazon are poorly-stocked. Sports is well-covered too, ranging from F1 to Premier League football and international cricket. Note, though, that BT is increasing its own sports coverage and has snaffled rights for UEFA Champions League and Europa League football from its satellite rival.

Beyond movies and sports, Sky offers its Sky One, Sky Arts and Sky Atlantic channels, as well as the usual plethora of UK majors (think BBC) and pointless EPG-filler (think DMAX and True Crime).





The Sky+HD PVR is available in a 2TB iteration, ideal for TV junkies

Kit

The Sky+HD hardware – be it the 2TB box or the smaller versions – utilises twin tuners. Recording clashes can therefore become irksome. Multiroom is an option, but additional boxes have to be hard-wired to the dish. This is where the Sky Q platform starts earning its crust – the headline Sky Q Silver PVR features 12 tuners, allowing for four channels to be recorded at once, and other channels to be watched – wirelessly – on connected client boxes (Sky Q Minis). Sky Q also has a wider selection of third-party apps, a revised UI and that future 4K support.



Sky introduced suggested content to the Sky+ EPG in 2014

Verdict

Sky has impressed by keeping its Sky+ platform at the cutting-edge through useful improvements to the interface and hardware, and is now introducing a 4K option with extra bells and whistles. It undoubtedly has the best content, including a peerless movies service, but it doesn't come cheap if you want the headline channels and you'll need to have a dish installed.

The Now TV alternative

One-month subscriptions and cheap hardware – we like



Anyone wary of being tied down to a lengthy contract, paying installation fees or budgeting for hardware should consider Now TV. This 'net-delivered service from Sky uses a media streamer, built upon Roku hardware, to feed free and paid-for content direct to your flatscreen. And the box costs a mere £15.

So what do you get from Now TV? At its most basic, it's a simple-to-use smart TV add-on, offering in-built apps for BBC iPlayer, ITV Player, All 4, Demand 5, YouTube, BBC News, BBC Sport, Sky News and Sky Sports News. This is all free, making it a brilliant option for partnering with a 'dumb' TV.

In addition, Now TV can be used in conjunction with paid-for 'passes' for Entertainment, Sky Movies and Sky Sports. Passes last daily, weekly or monthly, and can be cancelled at any time.

The Entertainment Pass (£6.99 per month), brings access to premium TV from Sky's roster, either as on-demand (beware that content here can come and go), catch-up or live streaming. Also based on a monthly sub is the Sky Movies Pass (£9.99), which carries a 1,000+ library of on-demand titles and grants access to 16 'premiere' showings each month. The Sky Sports pass is available in one-day, seven-day and monthly flavours. Pricing here is higher, with the month ticket costing £31.99, a week £10.99 and a day's access charged at £6.99.

BT TV



The Humax-made BT Ultra HD PVR delivers the UK's first 4K TV channel

BT HAS CAUSED quite a stir by launching the UK's first 4K channel – BT Sport Ultra HD. But does that make it a no-brainer for tech-heads or worth switching to from a rival platform?

The first thing to note is that BT's pay-TV service is actually offered in conjunction with the YouView platform. YouView itself is a mashup of Freeview HD, delivered via your aerial, and IPTV via your broadband connection. BT's channels all come over from the latter, and you'll need a BT broadband subscription and line rental.

Cost

Working out pricing isn't easy, as BT's packages are structured both around content package and broadband speed. The basic Starter pack, with 17Mb Unlimited Broadband and landline, comes to around £25 per month, plus a one-off activation fee. The Entertainment Plus package adds around £10 to that, while The Total Entertainment package sees base pricing rise another £6. And with the latter, you might find you're required to get the top-flight Infinity 2 broadband package, to ensure there's enough bandwidth for 4K. As usual, we advise you build your own package to get a fix on a monthly price.

Content

Channel selection isn't BT TV's strongest suit – even the full package claims a mere 108 channels. Yet these include BT Sport 1, 2, Europe, ESPN (which are also free on Starter and Entertainment Plus) and Ultra HD, plus AMC. There's a Netflix client, too, with 4K support from the Ultra HD box.

On top of your monthly sub, you can pay extra for Sky Sports 1 & 2 access on a 30-day rolling contract (pricing is £22 per month for SD and £27 per month for HD) and 11 Sky Movies channels (SD, £13.50 per month). Note that this isn't an option for multiroom.

Away from channels, BT TV serves up catch-up TV (with the major UK channels accessed via YouView+'s rollback EPG) and – squirrelled away in the user interface – a variety of on-demand services, some good, some bad. For instance, the Curzon Home Cinema app serves up on-demand films far removed from the usual Hollywood fare.

Kit

There are three options, linked to the package you choose. Opt for Entertainment Plus and you get a YouView+ PVR featuring a 500GB hard drive and compatible with BT's HD sports channels. Those on a tight budget who get the Starter subscription are provided with the Mini YouView, which can't record programmes and doesn't support BT HD.

The flagship hardware is the YouView+ Ultra HD box, with its roomier (1TB) HDD and 4K output capability. This is linked to the Total Entertainment package.

As with the satellite and cable options, multiroom is a possibility, but it's somewhat limited. Firstly, it only extends to a second room, BT Infinity fibre broadband is required and it doesn't work in conjunction with Sky content.

Verdict

BT TV is a bit of a curio. The Ultra HD Sport channel is superb, but more 4K content in general wouldn't go amiss and the requirement of a superfast broadband connection ups the cost considerably. YouView+ is generally a great platform, but the integration of catchup TV and pay content is a bit messy. Multiroom limitations, plus an average channel bouquet, count against BT TV too. That said, if you're a BT broadband customer, or want premium sport at a bargain price, it's worth consideration.



As well as the rollback YouView EPG, BT TV features an on-demand portal

Other options

Free and low-cost content providers in the UK

Netflix



The global on-demand corp has made a mint out of offering unlimited TV and movie content for a flat monthly fee, and is now luring new customers through its impressive roster of original programming and 4K streaming.

Amazon Video

Challenging Netflix in the 'net TV game is Amazon Video, available when you pay up for a £79 annual Amazon Prime subscription. Again, 4K streams are provided in addition to original content. Dedicated hardware is available too.

Freeview Play

Billed as 'catch up made easy', this free platform integrates BBC iPlayer, ITV Hub, All 4 and Demand 5 into an EPG with more than 60 TV channels (including 12 in HD). Available via Humax set-top boxes or some Panasonic TVs and PVRs.

Freesat Freetime

Similar to Freeview Play, only delivered via satellite. Needs a compatible set-top box (from Humax) or a TV with the service built-in (Panasonic). Note that UKTV channels (including Dave) aren't provided.

YouView

Freeview HD with added 'net-delivered catchup TV via integrated EPG. Available on some recent Sony TVs, Humax and Huawei PVRs, and via BT (see left), Talk Talk and PlusNet ISPs.

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Danny Phillips, Home Cinema Choice, June 2016

HOME CINEMA Choice BEST BUY



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Cinema in style



THREE'S COMPANY
Gripping thriller *Triple 9* guns for Blu-ray success, p97

KIT CHECKLIST

SCREEN RESEARCH: 130in, 2.35:1 acoustically transparent projector screen with automated masking
SONY: VPL-VW1100ES 4K projector
PANAMORPH: FDC1SYS anamorphic lens
SONY: FMP-X5 4K media player
TRIAD: 8 x InWall Mini/4 LCR speakers; 3 x InRoom Silver LCR speakers; 2 x InRoom Gold Sub subwoofers; 2 x RackAmp 600 amplifiers
PROCELLA AUDIO: 2 x DA-05 DSP power amplifiers
INTEGRA: DHC-80.6 AV processor/amplifier; DTA-70.1 power amplifier; DBS-30.3 Blu-ray player
KALEIDESCAPE: Strato 4K Ultra HD movie server
LUMAGEN: Radiance 4K Pro 4242 scaler
AMAZON: Fire TV 4K media player
APPLE: Apple TV
ROKU: Roku 4 4K media player
SAVANT: Integrated control system
LUTRON: Homeworks QS P6 lighting control



Step into this movie room and it's like stepping back in time – but there's nothing old-fashioned about its AV performance...

LAST ISSUE WE reported on a growing trend within high-end home installations towards modern designs and multi-functional rooms, yet this top-spec theatre shows there's still a demand for more traditional aesthetics and that real home cinema feel. And with Dolby Atmos audio and Ultra HD visuals from numerous sources, this picture palace is state-of-the-art, too.

The project was undertaken by UK company Cyberhomes, and was part of a whole-house AV, automation and control installation. The owner wanted a home cinema that reminded him of the vintage movie house he used to go to as a child; he also wanted the room to double as a 'theatre' so that his own children could put on shows.

Return to render

The install firm began by producing mood boards and concept visuals to work out the desired overall look and feel of the cinema room. This was followed by a 3D rendered animation, meaning the owner could see exactly how the room would appear – and give his approval – before any construction began.

As is often the case, the brief was for the biggest screen possible. Cyberhomes accepted >

A. Wonderwall

The focal point of the cinema room is the 130in 2.35:1 ratio Screen Research projector screen. Using an acoustically transparent material, it sits in front of the LCR speakers

B. Taking a bow

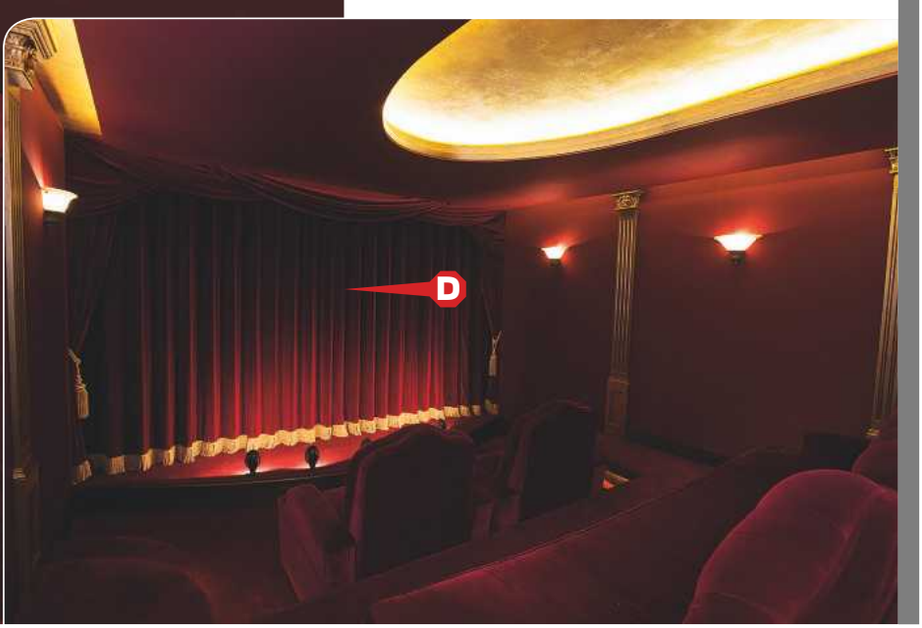
For the stage area, custom-made 'limelights' are mounted in front to ramp up the traditional theatre feel

C. The light touch

Multiple lighting circuits – controlled by Lutron hardware – deliver distinct themes, depending on what the room is used for

D. That's all folks!

Adding another touch of retro charm are motorised curtains that glide out automatically when it's movie time and close when the show is over



the challenge, specifying a 130in model from Screen Research, with a 2.35:1 'Scope aspect ratio. Acoustically transparent, it enabled the LCR soundstage of loudspeakers to be mounted behind in the optimum position.

Automated masking means the system is flexible when it comes to presenting content in different ratios. Playing a part here is a Panamorph anamorphic lens that works in tandem with the cinema's projector, a 4K-resolution Sony VPL-VW1100ES. This is housed at the back of the room in a custom-built bulkhead behind a projector glass mounted at an angle specified by THX. To ensure the IR sync signal for the 3D glasses was 'visible' at all the seating positions, an additional IR sender was mounted behind the glass.

The room features a 7.2.4 speaker system, with all models coming from US marque Triad. The dual woofers are InRoom Gold Sub models, using 15in long-throw drivers. InRoom Silver enclosures handle front, left and centre channels; the surround and height channels are delivered via the brand's InWall Mini/4s. A combination of amplification and processing from Procella Audio and Integra drives the system.

Acoustic adventures

In order to fine-tune the Atmos soundfield, acoustic treatments were introduced. The cinema is in a basement location, giving the installers an initial concrete shell to work with. Plasterboard was installed onto the walls, isolated from the concrete, with the space between filled with mineral wool. A stud frame was added on top of this to house the speakers and acoustic treatments.

For the latter, audio specialist RPG Europe supplied a 'Behind the Scenes' system, comprised of 100mm panels to deliver bass control, mid-range absorption and high-frequency diffusion. This, explains Cyberhomes, provided 'a balanced and controlled room – rather than just high-frequency absorption which can leave a room feeling too dry, muddy and boomy.'

To keep the room as sleek as possible, a hung ceiling frame was employed (also acoustically fettled), above which cabling could be run. And the two stud walls that flank the entrance and form the alcoves for a bar area and the twin AV racks were filled with concrete to isolate. Doors out of the entrance also use acoustic seals for improved sound isolation.

For the front aspect, a full baffle wall was constructed, again using mineral wool in the cavities, with triple layers of plasterboard separated by green glue. All the room's speakers are housed in bespoke boxes made from double-lined MDF and plywood. Acoustically transparent fabrics ensure that none of the speakers or the acoustic panels are visible.

With a 4K projector *in situ*, it's no surprise to see 4K video sources in the kit rack, with a Kaleidescape Strato 4K the most premium option. This new addition to the media server specialist's range debuted at CEDIA in September, and supports 4K/60p content with Dolby Atmos soundtracks.



E. **Sony, safe and sound**
The 4K Sony projector is installed in a custom-designed cabinet, helping reduce running noise. It fires through a dedicated projector glass

F. **Noises off**
The entrance doors are also acoustically treated to limit noise dispersion

G. **Remote control...**
A wall-mounted iPad lets the owner fire up the room's system from outside

H. **Pick a flick**
There's shelf space in the bar area for the owner's favourite Blu-rays

I. **Perfect projection**
An ISF calibration was conducted to get the best possible image from the Sony PJ

J. **Double decker**
Two Mid-Atlantic AV racks are required to house all the home cinema gear, plus connected hardware for the rest of the house

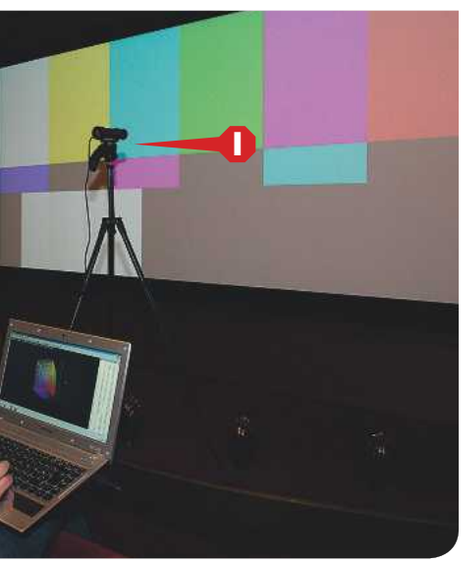














Currently, there are over 100 4K titles available for download from Kaleidescape's movie store, thanks to distribution deals with studios such as Warner Bros. The player is also ready for HDR content, should the owner choose to upgrade his projector in the future.

As well as the Kaleidescape Strato, the cinema room can be fed Blu-rays from an Integra deck, and stream from Amazon, Apple, Sony and Roku media players, including 4K from both Netflix and Amazon Video.

Also in the video chain is a new-for-2016 Lumagen Radiance 4K Pro scaler, providing an additional level of image processing. This was calibrated by an ISF-certified boffin to deliver the optimum picture quality and colour accuracy with each of the video sources. All content is scaled to 4K resolution by the Lumagen (if they are not natively 4K) before being sent on to the Sony projector.

Scarlet fever

Away from the droolworthy hardware, the interior design of this cinema also catches the eye. It's the kind of room that aims to look good even before anything is switched on.

Cue up a flick or stream a TV show and the motorised front curtains – in traditional movie-theatre red – open to reveal the screen, using a suitably heavy material to give them a pleasing sway as they draw apart. And there are more curtains at the rear of the room, employed to limit any light reflections and reduce bass pressure peaks at the bar area. These automatically close when a film is playing and open again if the movie is paused or stopped.

Lighting is managed by a Lutron control system. This allows different scenes for the different uses of the room: entertaining, movie mode, live theatre, etc. Nor does the theatre descend into complete darkness when it's film night – low-level lighting remains to make the steps visible and provide a degree of bias illumination for improved picture quality.

The whole cinema is controlled via a Savant system, which also manages the AV, lighting, security and heating in the rest of the property. A wall-mounted iPad outside the door allows pre-selection of the use of the room (cinema and source, theatre, etc) prior to popping in. The Savant interface is also accessible from the homeowners' own smartphones. Feeling chilly during a screening of *Everest*? Just nudge up the heating from the comfort of the vintage-style cinema chairs.

This project has been shortlisted for a CEDIA Award in the heavyweight Best Home Cinema over £100,000 category. Whether or not it scoops a top prize will be revealed in July, but it's obvious that the owner already feels like he's a winner, saying that he believes it offers a performance that it is 'superior' to a typical cinema experience.

'Cyberhomes built our home cinema to the most advanced possible specification – the Ultra HD and 3D sound combination is truly spectacular!' ■

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Photo: Musical Images installation

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REVIEWS

➜**HARDWARE** **SKY** Upgraded Sky Q system and Silver PVR **SONY** UHP-H1 Blu-ray player and flagship 75in XD94 Ultra HD TV **OPTOMA** GT5000 ultra short throw projector **MARANTZ** 9.2-channel Atmos/DTS:X AV receiver **ELAC** Dual 10in sub with app control/EQ **VIEWSONIC** Affordable Full HD PJ **GROUPTEST** Five premium soundbase speakers go head-to-head **& MORE!**



Double-barrel bass

JL Audio's £6,500 Fathom subwoofer delivers monster LFE thrills with total control. See p50

HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

All prices quoted are approximate and may have changed

The Sky TV viewing experience takes a massive leap forward with Sky Q, says **Steve May** – once you've mastered the new remote

Satellite supremo raises the PVR bar



1

AV INFO

PRODUCT: Satellite TV/ streaming with wireless multiroom

POSITION: Sky's new top-tier package. Sky+HD is still an option

PEERS: Virgin Media TiVo; BT TV



1. The Silver box uses a trackpad remote

To be honest, I was both excited and anxious about using Sky Q. From its distinctive handset to Planner grid, classic Sky has been a home comfort for the best part of a decade. The idea of junking it all in favour of some new-fangled product seemed a tad reckless. But the lure of a hybrid system mixing satellite delivery with streaming is too tempting to ignore – as is the prospect of 4K channels launching this Summer.

The Sky Q ecosystem is radically different to what we've had before, not least when it comes to multiroom viewing. Until now, that's been predicated on the clumsy idea of multiple cabled boxes which work in splendid isolation. But Sky Q has reworked the concept for the Netflix generation. The satcaster calls it Fluid Viewing, and there's more to it than just a natty marketing slogan.

With Sky Q, the new Silver PVR acts as a hub for connected Sky Q Mini boxes. These essentially stream content from the Silver. Not only can you watch live TV on a Sky Q Mini, but also your own recordings and on-demand content. The experience is transformative.

Beating the Q

When Sky Q is installed the first thing to go may be your old dish. The new platform requires an all-new wideband LNB, and to fit it my Sky installers simply swapped out the entire dish ('Much easier,' they explained). Existing cabling, however, remains intact. The Silver PVR still requires two feeds, but these now download the entire satellite stream to the box itself.

The PVR is considerably slimmer than the old Sky+HD box, yet it still houses a 2TB drive, in addition to 12(!) tuners. Not all of these are currently used, but you can now record four programmes simultaneously (a feature I've longed for more than you might imagine) and watch a fifth, while streaming to two Sky Q Minis. 300GB of that Silver hard drive space is reserved by Sky for push content.

The box has an elegant design with a silky finish and embossed logo. The rear panel comprises twin F-connectors, HDMI, Ethernet and an optical audio output. There are also two USB ports (not currently functional) and a second, covered HDMI. This transpires to be an input, presumably to loop through another HDMI device at some point. There's Wi-Fi too, working 2.4GHz and 5GHz bands concurrently.

Obviously Sky would like its subscribers to buy into its entire broadband ecosystem, but this isn't a prerequisite. I used a third-party ISP.

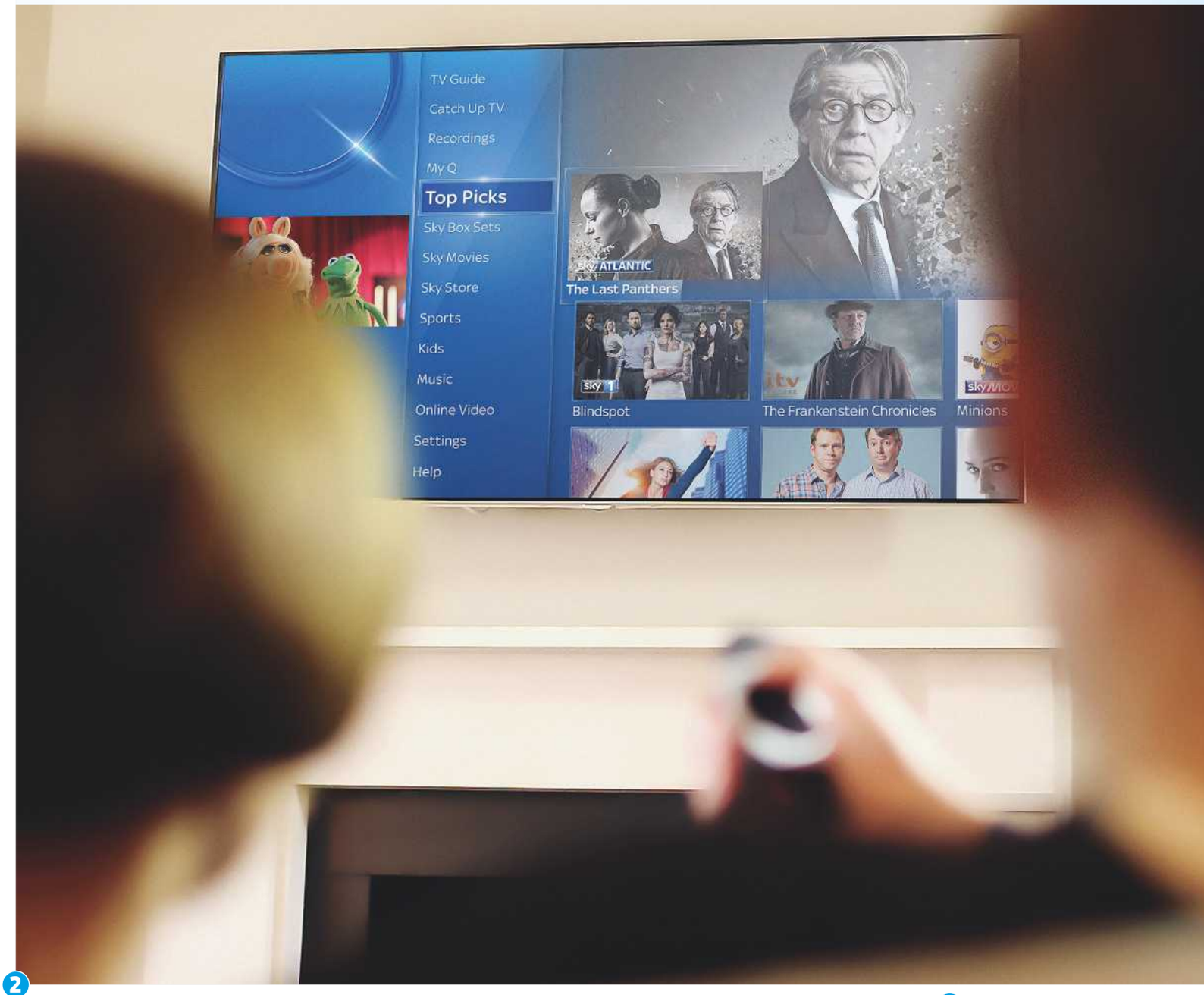
The system comes with an on-trend Bluetooth remote control. Called Q Touch, it has an integrated mic for voice search to be added at some point in the future. Traditionally I hold little truck with such devices, much preferring retro IR zappers, but I've got to admit to rather warming to it. It certainly takes a little patience to master, but the trackpad is astonishingly responsive. You really don't need to paint in broad thumb strokes. I can now skate about quite effortlessly, but there is one manoeuvre I still find tricky – fast-forward. This is driven via a touch-sensitive ring around the main pad and requires effort to manage. I've been overshooting where I want to get to.

The Sky Q Mini is, unsurprisingly, a good deal smaller than the Silver. But it's a cosmetic match, with HDMI, Ethernet and optical audio output. It's also Wi-Fi-enabled. The Mini doesn't come with that Bluetooth controller, preferring an IR remote with traditional buttons. This can also be used with the main box, which is useful if you or a family member can't get on with the Q Touch's trackpad.

A WPS button on the Mini pairs it with the main Silver box. In most circumstances, it'll communicate over Wi-Fi but in difficult locations you can network over a LAN.

While only two Sky Q Minis can stream from the mother box simultaneously, you can actually pair more. But if you >

HOME CINEMA Choice BEST BUY



2

try them all at the same time, you'll get a message that you've exceeded your connection quota.

A whole new world

As well as fresh hardware, Sky Q features a new interface, and it's as pretty as a picture. There's thumbnail art for practically everything, with dollops of metadata gluing the whole shebang together. Yet while there can seem a dizzying amount of functionality, it doesn't take long to absorb.

Click the Sky logo on the remote and you're immediately in the Recordings menu. Shows are thumbnailed to the right, with the most recent on top. Typically within Sky Q, menu items stand vertically, and you navigate horizontally. If you don't want to see your recordings chronologically, you can filter everything in an A-Z list. You can also see at a glance what's scheduled to record.

There're cool visual cues to help move you around. When there are deep menus to explore you see what appears to be a stacked panel. And to help remind you where you are, your 'cursor' is an arty starburst effect.

Hit the remote's Home button and you're presented with a genre-based content tree, topped by the programme guide. Below this are channel catch-up players (amounting to 38 at the time of writing), as well as boxsets, movies, sport, kids and music menus. As with Sky+HD, you can view your photos via the Sky box. However, now there's also AirPlay and Bluetooth music streaming support, which will be useful to some.

Of course, a TV platform built on an IP infrastructure can leave itself vulnerable. A broadband outage resulted in my Q UI largely blanking out. While recordings, live TV and programme guide were unaffected, other functionality vanished until the broadband connection was restored.

There are several entirely new areas to investigate on the Q platform. The My Q tab takes you to shows you may be halfway through, or presumptuously offers up new episodes for stuff you've recently watched. The 'i' button also calls up an info pane across the bottom of the screen, with a capsule description of what you're viewing, as well as what comes next.

And Sky Q makes a lot of assumptions. For example, when you record a new show it puts a series link on the programme by default; more often than not you'll want to do this anyway, so it's a welcome bit of hand-holding.

3



Household entertainment

Where the system really becomes transformational is with multiroom. The freedom to watch Sky anywhere around the house is brilliant.

Content is streamed across a locked 5GHz channel. If you have more than one Mini, perhaps two working in second-floor rooms, they form a mesh network. This approach is a smart way to reinforce distribution (it's the same idea popularised by Sonos). And if you have a Sky router, Minis become Wi-Fi hotspots.

The viewing experience on these second-room boxes is virtually identical to that on the main Silver, albeit without any PIP effects. The Q menu is identical, with all your recordings waiting to be watched or resumed. Miraculously, there's no evident sacrifice in image quality. Everything I streamed looked and sounded the same. Watching in HD, I didn't experience any buffering or image degradation. It seemed like a perfect mirror.

> 'Sky Q is certainly a bold move by the satcaster, and as a step-up from Sky+HD it's startlingly successful'

But that's not to say I didn't experience some hiccups. A 'Network proximity' error message appeared when for some reason my Mini lost a connection with its parent, and I experienced some shuddering of the onscreen UI – literally a juddering as I nav'd around – although this never affected the image.

Another niggle is that Sky doesn't allow subscribers to have more than one Silver PVR, nor mix the new hardware with existing Sky+HD gear. This might feel restrictive if you currently live with multiple Sky+HD boxes – after all that's a lot of recording capacity to lose. However, with the massive increase in on-demand content, and the ability to quaff recordings anywhere around the house, that loss of physical recording capacity isn't a deal-breaker.

What's more, you don't need a Mini to watch recordings remotely. The Sky Q app (for iOS and Android) mimics the Q interface and offers the same niceties. You don't even need to log in when you're on the same network, the app just finds your Silver box and you're connected. You can also download recordings to watch when away from your home.



Although the Q box features new silicon, image and audio quality prove to be indistinguishable from my previous Sky+HD box. To be honest, I stopped watching Sky's SD channels some time ago, and can merely report that they look as fuzzy here as I remember them to be. But the Sky HD bouquet looks terrific, and Dolby Digital 5.1 is thoroughly entertaining.

I was irked by one thing though. When playing back recordings, the Q logo spins a vivid blue. The LED is really intense, and while this might look good in a showroom, at home with the lights down it's a perennial distraction. Please Sky, whatever you do next, build a dimmer into a firmware update.

It should be noted that the Sky Q Mini is not a 4K device. When Sky starts 4K programming later this year (we're told) and you start recording 4K shows, the Mini probably won't even see them. And with a limit of one Silver box per household, you won't be watching 4K on multiple screens around your home anytime soon.

Successful successor

The introduction of Sky Q is a bold move by the satcaster, and one that seems to have been meticulously planned. As a step-up from Sky+HD, it's startlingly successful. I can't wait to see what's Qoming next... ■

SPECIFICATIONS

Sky Q Silver
HDD: Yes. 2TB ***CATCHUP CHANNELS:*** Yes. BBC iPlayer, ITV Hub, Sky One, Sky Atlantic, Sy-Fy and so on... ***CONNECTIONS:*** 1 x HDMI output (plus an HDMI input as yet unused); 1 x optical digital audio output; 1 x Ethernet; 2 x USB (for future use) ***DIMENSIONS:*** 232(w) x 155(h) x 34(d)mm ***WEIGHT:*** 1.7kg

FEATURES: Bluetooth and Apple AirPlay streaming; record four shows, watch a fifth live; MiMo dual-band Wi-Fi; 4K ready; Bluetooth Q Touch controller

Sky Q Mini
HDD: No. ***CONNECTIONS:*** 1 x HDMI out; 1 x optical digital audio out; 1 x Ethernet; 1 x USB (future use) ***DIMENSIONS:*** 232 (w) x 155(h) x 35(d)mm ***WEIGHT:*** 0.5kg

FEATURES: Dual-band Wi-Fi; remote record; live and pre-recorded channel streaming; on-demand streamer

PARTNER WITH



PANASONIC TX-40CX680B: With its thin-bezel design and 4K content coming from its onboard Netflix client, this 40in smart set (priced around £450) makes a great second-room screen to go with a Sky Q Mini

2. **The new Sky Q interface majors on thumbnail art and hi-res text**

3. **The Silver's HDMI output will support 4K broadcasts when services are launched**

HCC VERDICT ★★★★★

Sky Q Silver
→ £99 setup cost, plus subscription → www.sky.com

WE SAY: Sky Q is a brilliant mix of linear TV and on-demand, with seamless multiroom streaming. It's probably the most advanced TV system in the world



'The GT5000 has a negligible footprint, with no need to ceiling-mount or worry about hiding cables'

HOME CINEMA Choice RECOMMENDED

When traditional projection just doesn't fit, who you gonna call? Optoma's GT5000, says **Steve May**

Putting AV up against the wall

It's perhaps surprising that the concept of ultra short throw projectors for the home hasn't taken off more readily. Unlike traditional home cinema beamers, which cast images across 3m to 5m, UST models like this £1,000 Optoma GT5000 throw up a 100in image from just 30cm.

The advantages are obvious. Ultra short throw projectors have a negligible footprint, and with no need to ceiling-mount, there's no possibility that your audience will cast distracting shadows when they walk in front of the unit. Nor do you need to work out how to hide trailing HDMI cables.

Typically, such projectors are the province of corporate boardrooms and educational facilities, where they're often found bolted to rigs high up on the wall. But you can locate this model on everyday AV furniture, up close to a screen or white surface.

Design-wise, the GT5000 is living-room friendly, as it has to be. The chassis is all white and grey lines. The lens is recessed in the top of the unit, with connections ahead. Helpfully, input legends on the connections panel are printed upside down, so they read the right way up when you peer down at them from the top.

Here you'll find two HDMI inputs, dual VGA inputs, 3.5mm and stereo phono audio options, component video, Ethernet and RS232 control. There's also a 3D sync DIN (with support for DLP's 144Hz rapid refresh mode) – although no 3D glasses are supplied in the box. There's even a 12V trigger for electric screen integration.

Setup is a little different to the norm. Given the optical arrangement required by short-throw mechanics, you don't get a standard focus ring to spin, instead there's a paddle slider protruding from the base, which snaps the image into sharp relief. Focus is fixed, and the projector's throw ratio is 0.25:1.

In most instances you'll simply need to square up the projector to the display area. Vertical keystone correction is on hand to fine-tune the image, offering +/- 20 degrees of adjustment, along with a generous image shift.

As mentioned, a 30cm throw distance yields a 100in picture. The further the GT5000 is positioned from your screen, the larger the image becomes. I found I could easily fill the best part of an entire wall, albeit with increasing loss of edge definition. Still, if what you're after is more fun than film-school, you'll not be disappointed at the scale available.

Beneath the lid, there's a single 0.65in DarkChip 3 DLP device. As you'd expect from Texas Instruments, the GT5000 is also BrilliantColor-enabled. However, there are no image interpolation modes, so don't expect absolute motion detail to be retained in fast-moving scenes.

The PJ claims a brightness rating of 3,000 Lumens, which can be can be considered extremely bright. It's therefore designed to work in well-lit environments. A GT5500 step-up model goes even brighter.

Digging out detail

Image quality resides on the right side of respectable. Guillermo del Toro's *Crimson Peak* is a lush, highly-detailed Blu-ray haunter which this Optoma tackles with appropriate spirit. Shadow detail is a tad crushed, but the dynamics remain engaging (Optoma quotes a contrast of 23,000:1). While I was aware of DLP's rainbow fringing during scenes of high contrast, it was only a sporadic nuisance. When *Crimson Peak*'s black and inky spectre first appears and climbs into the bed of our terrified heroine, there's plenty of spine-chilling detail onscreen.

The projector has an onboard sound system boasting 16W of amplification, but it's thin and squawky. The noise it makes just about passes muster if audio is an afterthought, but even undiscerning movie fans and gamers will want to partner the projector with a soundbar or AV system.

Overall, colour fidelity isn't perhaps on a par with Optoma's dedicated home cinema PJs. Skin tones sometimes struck me as either overcooked or a little pallid. Gaming lag isn't an issue, though. Using the projector for a bout of *Overwatch* (PS4), I felt no sense of delay or microsecond obfuscation. Optoma rates lag at 33ms.

While the GT5000 may be pitched as an entertainment device, its corporate roots can be discovered. Evidence of the model's business leanings is found in the fact that the >

AV INFO

PRODUCT:
Ultra short throw projector

POSITION:
Optoma's GT5500 offers similar specs, but a higher 3,500 Lumens rating

PEERS:
Epson EB-580; BenQ MW883UST

1. **Optoma's ALR100 is a 100in screen designed for well-lit environments, and a suggested partner for the GT5000**

2. **The living-room ethos extends to the cutesy remote**





3

SPECIFICATIONS

3D: Yes. Active shutter spex optional; DLP 144Hz rapid refresh rate support ***4K:*** No. 1,920 x 1,080 Full HD ***CONNECTIONS:*** 2 x HDMI inputs (1.4a); 2 x VGA inputs; 1 x composite video; 1 x 3.5mm audio inputs; 1 x 3.5mm audio output; stereo audio input; RJ45 Ethernet; RS232; 12V trigger; microphone input; USB-A power; 3D-Sync ***BRIGHTNESS (CLAIMED):*** 3,000 ANSI Lumens ***CONTRAST (CLAIMED):*** 23,000:1 ***DIMENSIONS:*** 385(w) x 310(h) x 120(d)mm ***WEIGHT:*** 4.78kg

FEATURES: Single 0.65in DarkChip 3 DLP device; 16W built-in audio; 0.25:1 throw ratio; rated power consumption: 310W Bright mode/260W Eco mode: 28dB fan noise; UXGA, SXGA, WXGA, HD, XGA, SVGA, VGA computer support; 6,500-hour maximum lamp life; vertical keystone correction; image shift

PARTNER WITH



SONY BDP-S1500: Install the Optoma with an affordable, compact BD spinner such as this £60 Sony deck that measures just 23cm across. USB and network connectivity bring additional content to your bigscreen experience

3. **The projector's short-throw lens peeks out from the top of the chassis**

remote control doubles as a laser pointer. And while I could be persuaded that this projector would be a fun addition to a kids' den, there's no way I'd leave my little nippers to play optometrist with a laser pointer remote...

That aside, this is an easy machine to live with, mainly because there's not an awful lot of control to master. Display modes comprise User, Movie, Bright, Presentation and Blackboard (more corporate giveaways), with the usual adjustable parameters available – including

> 'The ability to fill an entire white wall with images from apparently nowhere borders on science fiction'

Brightness, Contrast, Colour, Tint, Sharpness and variable gamma (1.8, 2, 2.2 etc). Those who don't want to tweak should stick to Movie.

The projector is a little on the noisy side in general use. To keep things manageable, ensure the lamp is running on Eco, for 28dB or thereabouts. Lamp life in this mode is said to be a generous 6,500 hours.

Howdi, partner

Where Optoma's ultra short throw proposition starts to get particularly interesting is with the brand's new ALR100 screen. This is a fixed-frame 100in design that can be purchased separately (for £900) or as part of a bundle with the GT5000 for around £1800.

This ambient light rejecting screen (hence the ALR name) has a silver grey finish and is designed to improve contrast and colour performance in rooms with ambient light (as you might prefer for gaming or sports).

It's an aggressive price for an ambient light rejecting screen. Alternatives from Screen Innovations, Elite and Projecta run from £3,000 for the Black Diamond and £2,640 for the Parallax to £1,900 for the DarkStar. What we have here is quite a tempting budget option.

While the ALR100 doesn't work miracles in bright sunshine, it makes quasi-daytime projection a more convincing proposition. Optoma says the ALR screen rejects 90 per cent of ambient light (perhaps somewhat optimistically), and therefore is a more affordable (not to mention practical) bigscreen alternative to a 100in LCD telly.

The fabric itself attaches to the frame with a multiplicity of tension springs. Cosmetically, it looks suitably televisual, thanks to a thin 16mm bezel. Gain is rated at 0.42.

What I found interesting was not so much its bright-room performance, but the way in which the fabric transforms the projector's black level skills. What is dark grey becomes almost solid OLED-style black, and colours also get more of a pop. *Gravity* (Blu-ray) is always a challenging exercise for projectors, not least because it combines deep black space with some truly bright white peak highlights. On matt white fabric, you'd be forgiven for thinking that low Earth orbit is a predominantly dark grey place, but on the ALR screen it's transformed into a startling black void.

The short-throw advantage

Overall I rather like Optoma's GT5000, not least because ultra short throw projectors make an awful lot of sense for the average home. This model is easy to accommodate and entertaining to use. While it doesn't offer the same level of image fidelity that a dedicated home theatre projector of similar standing might boast, it has some cool advantages all of its own. For gaming and sports sessions it's a hoot – and the ability to fill a wall with flickering images from apparently nowhere borders on science fiction. Optoma's partnering low-cost ALR100 screen similarly gets a thumbs up. However, that laser pointer remote just has to go ■

HCC VERDICT ★★★★½

Optoma GT5000
→ £1,000 → www.optoma.co.uk

WE SAY: 1080p resolution comes to corporate-style ultra short throw projection, and we like it. This bright light cannon is a tempting media room addition



Blue Ice White, Kent Engineering and Foundry Edition

HOME CINEMA Choice
REFERENCE STATUS

HIGH END HERO

'This system is British surround high-fidelity at the utter state-of-the-art. And it's easily worthy of its Reference name.'

KEF REFERENCE 7.2 System,
Home Cinema Choice,
March 2016

THE REFERENCE

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KEF

OBSESSED WITH HIGH RESOLUTION



1

STICK 'EM UP
Quentin Tarantino returns with *The Hateful Eight* on BD, p96

HOME CINEMA Choice
BEST BUY

Big, bright, better

Sony's flagship TV for 2016 has **John Archer** wishing all LCD TVs were made this way – although that would make his home cinema habit very expensive...

SONY'S 75X9405C WAS one of my favourite TVs of 2015, so I'm understandably excited to have its successor, the 75XD9405, on my test bench. Even though it was a bit of a squeeze – the screen here is 75in...

Sony's top-range telly manages to look both bigger and smaller than its predecessor. In other words, while a design shift away from the huge, speaker-bearing 'wings' of last year's model to a narrow-bezelled design makes the TV's overall form factor considerably more compact, the thinner frame also makes the screen itself seem larger. Which is, of course, just the way I like it.

Considering the 75XD9405 against the Sony XD9305 TV tested in a previous issue, the main difference – apart from screen size – is that the XD9405 model lights its images using LEDs directly behind the screen rather than around its edges. This is actually a major difference, which makes it odd that Sony is bundling both sets together under the same tab on its website. Using a full-array backlight should have the potential to craft better images, particularly when it comes to the luminance peaks of new HDR content.

The backlight is here coupled with a local dimming system capable of outputting different light levels from its LED clusters. The XD9405 also features the advanced version of Sony's X-Tended Dynamic Range light management suite, which diverts power from dark image parts to brighter ones, so the latter can enjoy more punch without gorging on more electricity.

Meanwhile, the wide colour spectrums associated with HDR sources – be they Amazon/Netflix streams or Ultra HD Blu-ray discs – should benefit from the 75XD9405's Triluminos colour technology, as well as the advanced colour controls delivered by Sony's X1 chipset and X-Reality Pro processing. This chipset/processing combi also handles the local dimming, as well as the upscaling of HD sources to the screen's native 4K resolution.

Sony doesn't share its TV's precise specifications, but the Japanese corp claims the 75XD9405 meets the brightness, contrast and colour demands of the AV industry's Ultra HD Premium standard, making it



2

AV INFO

PRODUCT:
75in 4K TV with direct LED lighting and Android smarts

POSITION:
Sony's 2016 flagship

PEERS:
Samsung UE65KS9000; Panasonic TX-65DX902

a suggested rival to Panasonic's DX902 models and Samsung's KS9000 SUHD sets. Sony hasn't actually pursued the Ultra HD Premium badge, preferring to brand with its own '4K HDR' logo.

Other features of note include 3D playback (using the active system), and smart features delivered by Android TV. Which essentially gives you more apps than you could ever need in a rather cumbersome interface.

Best in breed

You might expect me to say this, given the £5,000 asking price of Sony's set, but armed with *Deadpool* and *Exodus* on Ultra HD Blu-ray the 75XD9405 delivers the best all-round HDR performance I've seen from a TV to date.

For starters, the direct LED lighting creates just the sort of spectacularly wide contrast range HDR thrives on. Black levels go deeper than any other 2016 LCD screen, and even the set's deepest blacks share screen space with potent peak whites and bright colours. This means you're never left in any doubt during high-contrast sequences that you're watching HDR.

The HDR pictures aren't, surprisingly, quite as bright as those of Samsung's 55KS9000 or Panasonic's 65DX902. But they certainly do the format justice and, crucially, 'difficult' HDR sequences, such as Chapter 7 of *Exodus*, are an easier watch on this behemoth, because Sony's set suffers relatively little with backlight clouding and banding problems.

Colour handling is imperious, delivering everything from the gorgeous sun-drenched skies in *Exodus* to the natural skin tones and subtle tonal details of Deadpool's suit with what feels like real finesse. This helps *Deadpool* appear both more three-dimensional (despite UHD Blu-ray only supporting 2D) and more naturally integrated into his surroundings.

The 75XD9405 also excels at delivering the full impact of watching native 4K sources on a 4K resolution screen. This is partly because of its size but also because of Sony's exemplary colour, light, motion (when using the Clear Motionflow preset) and detail management. In short, it's a cinematic presentation, with pictures looking more like reality than images drawn on a screen.

Despite all this, the TV isn't flawless. While its backlight handles contrast-rich HDR content better than its rivals so far (I imagine LG's OLEDs will give it a run for its money), there is quite noticeable light 'blooming' around *Deadpool*'s brightest bar signs, or the candles and torches during some night-time sequences in *Exodus*. Also, where a very bright image element occupies a large amount of an HDR shot, the way the backlight works can cause a sudden noticeable shift, not just in the image's overall light level but also its colour tone.



Mercifully, though, the moments where these issues materialise are rare. And even when they do occur they're less distracting than similar issues on the other HDR LCD TVs I've seen this year.

With standard dynamic range sources the 75XD9405 is simply fantastic. Black levels are beautifully deep but also full of shadow detail, colours look balanced and natural, detail levels are high regardless of whether you're watching native 4K or upscaled HD, and there's no extraneous video noise, as long as you take time to reduce the default 'sharpness' and 'Reality Creation Resolution' settings in the TV's user menus.

It's a decent 3D performer, too. The vast screen helps immerse you in a stereoscopic world, and the visuals are outstandingly bright and colour-rich despite the dimming from the shuttering 3D glasses. Motion is handled well, and the hefty contrast on tap creates a prodigious sense of depth and space. The only catch is – you guessed it – some occasional crosstalk ghosting. But I'd rather have this 3D performance than none at all, especially with other brands (Samsung and Philips) giving 3D a cold shoulder.

With those bulky magnetic fluid speakers of its predecessor ditched, it's no shock to find that this TV doesn't sound nearly as powerful. Though I felt it does fare slightly better than the step-down XD9305 series (despite apparently boasting the same core audio spec), with slightly more bass and less treble harshness.

So, I miss the audio potency of its predecessor, and the HDR format finds chinks in its picture quality armour, but the performance here is mostly breathtakingly good no matter what your source. Comfortably the best 2016 TV I've auditioned. And the biggest and most expensive ■

SPECIFICATIONS

3D: Yes. Active ***4K:*** Yes. 3,840 x 2,160 ***HDR:*** Yes. HDR 10 ***TUNER:*** Yes. 2 x Freeview HD, plus YouView ***CONNECTIONS:*** 4 x HDMI inputs; composite video input; component video input; RF input; Scart input; Ethernet; 3 x USBs; headphone jack; optical digital audio output ***SOUND:*** 4 x 7.5W ***BRIGHTNESS (CLAIMED):*** N/A ***CONTRAST RATIO (CLAIMED):*** N/A ***DIMENSIONS (OFF STAND):*** 1,672(w) x 965(h) x 52(d)mm ***WEIGHT (OFF STAND):*** 38.7kg

FEATURES: Built-in Wi-Fi; USB multimedia playback; X1 and X-Reality Pro 4K processing system; Triluminos colour; Android smart TV system; Direct LED lighting with local dimming; HDCP 2.2 on all HDMI inputs; Motionflow XR 1200Hz

PARTNER WITH



YAMAHA YSP-5600: Add a premium soundbar to this mega screen in the shape of Yamaha's Dolby Atmos-enabled beamer. The YSP-5600 (£1,700) uses 46 drivers to create an enveloping soundfield

1. Although 75in, this set isn't Sony's biggest – there's an 85in XD8505 model available

2. Sony's handset offers dedicated Netflix and Googlecast keys

3. Unlike the XD93 TVs, this flagship uses a direct LED backlight

HCC VERDICT ★★★★½

Sony KD-75XD9405

→ £5,000 → www.sony.co.uk

WE SAY: Although some HDR content catches it out, the 75XD9405's brilliance for the vast majority of the time makes it an easy recommendation to anyone with a big room/wallet

Sub-bass superstar

This woofer is both big and clever. Unlike **Adam Rayner**, who literally wrestled with it after not reading the manual...



AV INFO

PRODUCT:
Dual driver sub with onboard room EQ

POSITION:
Top of JL Audio's Fathom line

PEERS:
REL G1;
Paradigm SUB 1;
Velodyne DD18+

HOME CINEMA Choice
REFERENCE STATUS

JL AUDIO'S FATHOM f212v2 home cinema subwoofer system arrives in a double carton of immense strength that sits atop four puffy, plastic bagel-like feet. This is so that a forklift can be used to shift it, as the sub weighs sixteen stones. And that doesn't count the hefty carton assembly. I got help to get it into my room but thought, with Rayner-sized arrogance, that I could position it easily enough. I have carpet, the device has four rubber feet. So what happened? I nearly broke my back 'walking' the thing into position. After doing this I examined the accessories pack to find not just white gloves but ones with grippy finger tips, plus four slippery plastic cups that go under the rubber feet and allow you to skate the monolithic thing into place. I felt like Bugs Bunny when he grows donkey ears...

This is a mighty product, yet JL Audio blithely suggests that you will want to use two, three or best of all four, which at UK import prices will be £25,996. Yep, that's £6,499 per subwoofer.

We previously reviewed the Fathom f212 (*HCC* #214). This is an upgrade of that model. JL Audio likes to evolve its hardware, appending 'v2' to the product name. It has got to v3 with some other lines, and only embarks on a whole new name when it has reason to.

Ch-ch-ch-ch-changes

The f212v2 is a big black box – standing 80cm high – with two 12in drivers in its front face. It uses massive amplification along with sophisticated control electronics. Styling is much the same as the first. However, the room optimisation processing is now immensely more sophisticated than before, with eighteen bands of digital equalisation being applied during the D.A.R.O. (Digital Automatic Room Optimization) process.

Best of all, perhaps – and not actually seeming to have cost you any more, as the £600 price shift from v1 to v2 is I think down to currency exchange rate changes since we looked at the first one – is the power upgrade. JL Audio has added amplifier power to take the f212v2 from 1,500W RMS per driver to 1,800W RMS per driver. Yes, the 'upgrade' is to add more power than most woofers come with. It also adds another two kilos of weight.

The 12in transducers are covered by eight different patents concerned with enabling them to run cool and travel an hysterically long way in and out (in excess of 3in). These remain the indoors version of the W7 woofer JL Audio makes for the car industry, without having to worry about automotive moisture issues. If any changes have been made to these drivers over the previous f212 they're being kept under wraps.

To set up, I plugged in the microphone – a neat,specific-to-this-system device – and pressed the D.A.R.O button on the front control panel. Quite unlike other room optimisation systems, this did not run descending tones but rather three minutes of what's described in the manual as 'hashy static'. Then, it was showtime.

First, I played some rich, dynamic bass-heavy music by Yello, the Euro electronic duo who have been the darlings of the hi-fi trade in their time with *The Race* being played to death at shows. It was clear that my reference B&W 800 series floorstanders 'liked' the support. There was no gap, no swelling, no overly boisterous feel to the bass, but there was a sheer scale that grasps you by the sternum.

I bought *The Force Awakens* on Blu-ray especially for playback with this new woofer. Now I will show off here and brag about my chum 'Big' Mick who does Metallica's live sound. He requested that Glastonbury management have his thrice-normal sub-bass PA system for the band at the festival in 2014. Why? Because of scale. More bass makes all of a soundfield feel bigger and richer. With the *Star Wars* disc, it meant that first brass stab of John Williams' score sounded huge and actually gave me goosebumps.

Like a new car with a big engine, I played with the obvious, enjoying major scale events for the fulsome power of the f212v2. The basso rumble as the very opening sequence in JJ Abrams' flick unfolds was epic in its depth and size. I had to turn the control down from 0dB on setup so as not to overwhelm my speaker array. I am a fader pusher, not puller, in engineer-speak.

When we meet The Scavenger we feel the weight of the tired engines of that wheelfree, hovering motorcycle. And when Kylo Ren indulges in a little torture, there's a low-end throb that dug deep into my bones. Likewise, a crashing First Order fighter in the Badlands, or the Millennium Falcon taking off, both offer major excitement. The Fathom's feel for these LFE moments is so good that you get wrapped up in the action.

Meanwhile, with the beginning of *Limitless* (one of my go-to demo platters), the breaking-down-the-door sequence was like being kicked in the belly, hard and with unerring accuracy.

Yet this is to be expected. Perhaps the real sign of this sub's class was experienced in the *Star Wars* scene with Snoke. All that DSP cleverness bears fruit, with the taut accuracy of the abyssal lows making the space feel more cavernous than a cathedral. You can literally feel the size of the space the characters are in, in a way that defies simple description but gives acoustic agoraphobia.

In short, this is a wonderful device fully deserving of its v2 label. It's suited to largescale home cinema, but also means you could have smaller speakers than floorstanders and still enjoy reference-grade audio. I loved it to bits, except for having to move it around ■

SPECIFICATIONS

DRIVE UNITS: 2 x 12in proprietary long-excursion woofers ***ENCLOSURE:*** Sealed box ***FREQUENCY RESPONSE:*** 20Hz-97Hz (+/-1.5dB); -3dB at 19Hz and 110Hz; -10dB at 15Hz and 157Hz ***ONBOARD POWER:*** 3,600W RMS Class D amplifier ***REMOTE CONTROL:*** No ***DIMENSIONS:*** 379(w) x 812(h) x 518(d)mm (including feet and rear fins) ***WEIGHT:*** 102kg ***CONNECTIONS:*** Phono inputs (paired, stereo or mono use); balanced XLR inputs and XLR slave output socket; front microphone socket for onboard Digital Automatic Room Optimization system

PARTNER WITH



PARASOUND HALO A51: Treat the rest of your speaker array to some potent power with amplification from Californian audio brand Parasound. The five-channel A51 sells for around £5,000 and delivers a claimed 250W per channel

1. **The front panel houses controls and the mic input for the D.A.R.O EQ system**

2. **There are balanced XLR ports, in addition to phono inputs, for use with compatible AV hardware**

HCC VERDICT ★★★★★

JL Audio Fathom f212v2

→ £6,500 → www.av-techsolutions.co.uk

WE SAY: This high-end woofer offers astonishing bass power with supreme control. As well as massive scale, it can create epic 'space'. Drawbacks are the price point and size of the thing...



HOME CINEMA Choice BEST BUY

Sony delivers a Blu-ray sucker punch

There's no UHD disc playback here, but **Steve May** discovers that doesn't bother him – with the UHP-H1 Sony has delivered a feature-loaded premium AV player at a tempting price

I KNOW WHAT you're thinking. Why would anyone buy a new 2K Blu-ray player when 4K Ultra HD models are finally starting to appear?

As it happens, if we're talking about Sony's new UHP-H1 flagship, then price and performance are pretty darn compelling reasons. After all, why gamble on the fledgling 4K format when this player has more universal appeal?

And I've another, more contentious argument in favour of the H1. I'm increasingly of a mind (based on the limited evidence of just two 4K players, and early-generation HDR TVs), that if you're serious about AV, you may actually need two Blu-ray decks: one for 1080p discs and a second for 4K UHD.

The inconvenient truth is that a 2K Blu-ray played into a UHD HDR-enhanced/enabled HDMI input doesn't always look quite right. Sure, you can faff around switching this and that to try and compensate, but perhaps the best solution is to keep your different sources separate?

AV INFO

PRODUCT: Hi-res audio/Blu-ray player

POSITION: Sony's current top dog until its 4K deck debuts next year

PEERS: Pioneer BDP-LX58; Samsung UBD-K8500

Hey, handsome

Admittedly, I've also been swayed by the UHP-H1's handsome looks. This deck is a big improvement over the rest of the Sony BD line, which in terms of build quality are little more than electronic burritos. This model employs a robust frame and beam chassis that even Oppo would be proud of. Cosmetic trim is bolted on to the main bodywork, while the internal roof features a honeycomb sculptured design to dampen vibration. The player has heft and refinement. It's not full-width or height, but don't let that fool you.

The front-panel design is appropriately neat, with covered USB, eject and power buttons organised to the right. The rear panel offers twin HDMI outputs, plus phono stereo, coaxial and optical digital audio outputs, and Ethernet LAN.

The analogue stereo connectors have been widely spaced, so you can easily use chunky, high-quality interconnects with thick cable shields.

Those twin HDMIs are intended for separate audio and video use. The HDMI standard doesn't actually allow manufacturers to get rid of the picture output entirely, so this player reduces the bitrate to a dribble and outputs it as black. Alternatively, you can route sound and vision from both HDMIs, but when you do that lossless audio defaults to core 5.1 (Dolby TrueHD to Dolby Digital and DTS-HD Master Audio to DTS).

The deck has two Wi-Fi aerials in a MIMO configuration. A Bluetooth aerial is located separately, on the front panel, to reduce interference. The system also supports Sony's own Bluetooth LDAC codec, compatible with other Sony gear, for wireless hi-res audio transmission.

Using the UHP-H1 presents no problems. The remote is a mid-size pointer, but feels tactile with its rubbery buttons. The graphic user interface is primarily built around apps, both 'Featured' and personalised. Content options include Netflix, Amazon Video, BBC iPlayer, Demand 5, YouTube and Spotify.

The player also supports PlayStation Now, Sony's subscription streaming game service. This means you can partner it with a DualShock 4 controller and game away for £13 a month. This functionality was introduced on Sony Blu-ray players late 2015, and it may well appeal to those not yet in ownership of a PS or Xbox console – titles offered are drawn from the PS3 catalogue and include the likes of *Assassin's Creed* and *Uncharted*.



SPECIFICATIONS

ULTRA HD: No ***UPSCALING:*** Yes. To 2160p60 ***MULTIREGION:*** No. Region B BD/R2 DVD ***HDMI:*** Yes. 2 x outputs (v.2/v1.4) ***MULTICHANNEL ANALOGUE:*** No ***DIGITAL AUDIO:*** Yes. 1 x optical digital; 1 x coaxial digital ***ETHERNET:*** Yes ***BUILT IN WI-FI***: Yes, with MIMO ***SACD/DVD-A:*** Yes/Yes ***DIMENSIONS:*** 360(w) x 50(h) x 250(d)mm ***WEIGHT:*** 2.8kg

FEATURES: Stereo analogue phono output; Bluetooth (LDAC); front-mounted USB port; picture processing modes; IP control for Crestron/Control4 systems; PlayStation Now; PlayStation Movies; Netflix; Amazon; iPlayer; Demand 5; Spotify; screen mirroring; DLNA media playback: MPEG, WMV, MKV, AVCHD, MP3, AAC, WMA, FLAC, DSD 28MHz/5.6MHz and AIFF file support

PARTNER WITH



SAMSUNG UBD-K8500: Slot the Sony into your kit rack next to Samsung's reasonably affordable (£430) Ultra HD BD deck – that way your AV format needs are fully covered, from legacy hi-res audio to next-gen video

Also available is PlayStation Video, Sony's movie and TV streaming portal.

Another bonus feature is that the player can be used with other Sony products in a multiroom ecosystem. This includes the latest wave of soundbars.

Maps to the stars

It doesn't take long to cop how great a video player the UHP-H1 is. With Super Bit Mapping engaged, here in a 16-bit iteration, the player does remarkable things with edge smoothing and interpolation. This is then upscaled to 2160p60, with 4:4:4 colour subsampling, if you're using a UHD display.

Whether upscaled to 4K or native 1080p, Blu-rays look beautiful. *Star Wars: The Force Awakens* is a jaw-dropping treat. The texture of Rey's robes and dynamics of the shiny Stormtroopers are outstanding. A comparison

> 'The more I used the player, the more enamoured I became – the UHP-H1 offers sensational AV performance'

between *San Andreas* (Warner Blu-ray) in native 4K on a Panasonic UB900 and upscaled via the H1 reveals few image differences beyond the benefits of the UHD disc's HDR grading.

Disc loading speeds are sprightly enough. A Java-heavy Blu-ray (my trusty copy of *Goldfinger*) went from tray to menu in 40 seconds, while a less packed music concert disc did the same in just 27 seconds. The disc tray opens and closes with steely purpose, without the rattle of budget players. The machine itself is eerily quiet in operation.

But here's the thing. The UHP-H1 is equally as good with audio – so is this a premium music player that just also happens to do hi-def video?

With Super Audio CDs, the Sony sounds astonishingly dynamic. I got quite a kick playing the Pony Canyon SACD release *Chaotic Planet* by HYPS (Hatakeyama You Project For Spirits), not least because that disc's mastering was supervised by Takashi Kanai, Sony's legendary sound engineer, who was also involved in the audio tuning of the H1. This modern jazz recording ebbs and flows, played here with often startling dramatic percussion.

And this is a universal design, too. The H1 is compatible with DVD-Audio (a format that Sony typically eschews) and its inclusion is unlikely to impress most buyers but welcome nonetheless. The deck's PCM performance is sensational. I found the multichannel soundstage of *The Prophet's Song* (Queen, *A Night at the Opera*) thrillingly three-dimensional. The 5.1 remix by Elliot Scheiner and Roy Thomas Baker, with involvement from Brian May, is classic fare, and the H1 gives it fresh life.

Done with discs? The player supports a wide range of video and audio codecs, including MKVs and DSD. To play them from across a LAN, you'll need to add the Media Server app from the All Apps menu, registering it as one of your 'My Apps' – which seems a drag for what is essential functionality.

Sony's BD saviour

The more I used the UHP-H1, the more enamoured I became with it. It combines sensational video performance with excellent audio, and considering the feature set is a steal for the price. If you're after a hi-res audio network/disc player, a high-quality BD spinner, or both those things, this Sony is your saviour ■

HCC VERDICT ★★★★★

Sony UHP-H1
→ £400 → www.sony.co.uk

WE SAY: The best Sony Blu-ray player in years is also a fine hi-res audio device, and loaded with features. It's beautifully built, too. No UHD support, but we're not complaining



1. The deck's frame and beam chassis is designed to reduce mechanical vibration

2. Although a hi-res audio player, the Sony doesn't offer multichannel analogue outputs



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Premium soundbases

There's a huge market of TV speakers vying for your attention, but not all are created equal. **Danny Phillips** auditions five powerhouse models with high-end ambitions



CABASSE STREAM BASE
Adds DLNA playback to its audio boosting aims

CANTON DM100
Large model designed for the biggest of TVs

GENEVA MODEL CINEMA
Swiss speaker that puts performance first

PHILIPS FIDELIO XS1
This soundbase comes with a separate subwoofer

YAMAHA SRT-1500
Ready to be part of a MusicCast multiroom setup >

Cabasse Stream Base

This French fancy marries its 2.1-channel output with DLNA streaming and hi-res audio support



WHEN CONSIDERING THE Cabasse Stream Base, there's good news and bad news. Assuming you want the bad news first, it's only designed to support TVs up to 42in (or 35kg in weight), so owners of large home cinema sets need not apply, and there are no larger versions either. I tried perching my 55in TV on it and its stand swallowed up the entire top surface (don't try this at home).

The good news, however, is that it's equipped with Wi-Fi and multiroom functionality, giving Cabasse an advantage over its rivals. Used in conjunction with the Awox Cabasse Stream Control smartphone app, you can access Spotify, Deezer, Qobuz and TIDAL or stream music from your DLNA devices (including hi-res files up to 24-bit/96kHz). There's also aptX Bluetooth and NFC for good measure.

In terms of design, the Stream Base is as chic as you'd expect from a French-designed speaker. The glass top panel is framed by a gleaming edge trim, which contrasts stylishly with the black cloth grille wrapped around the edges. It's a beautifully-made speaker.

The cabinet is completely devoid of buttons. A text-based LED display (which doesn't disappear when idle) shines through the front grille and there's an NFC touchpoint on top. The whole thing sits on thick, sturdy feet.

The rear panel plays host to a modest array of sockets. There are no HDMI ports, so you'll need to use your TV as the hub, connected to the optical input. It's backed up by a 3.5mm minijack port for portable devices and a USB port for flash drives. Cleverly you can stream tracks on USB storage to other Cabasse multiroom speakers.

The driver array includes dual dome tweeters, four mid/bass drivers and a down-firing 5in woofer. It's a stereo 'base, with an active four-way design for each channel – the tweeters get 10W each, the mid/bass drivers receive 25W and the sub gets 40W.

There are two sound modes on board, dubbed Hi-Fi and Home Theater. The latter uses processing to expand the width and depth of the soundstage while keeping dialogue clear and focused.

The Cabasse app is one of the better examples of the genre. It's clear, quick and well organised, guiding you down a logical path towards your desired song or album. Streaming services are clearly signposted and multiroom operation is a breeze.

Instrumental insight

Play a movie and the Stream Base's sonic class oozes from the speakers. Effects and dialogue are laced with layers of crisp top-end detail, making them incisive and life-like. This sense of finesse is particularly impressive when playing movie scores with soaring strings and flutes; the Cabasse treats the instruments with an open, velvety quality.

But the Stream Base also gets down and dirty when required, thrashing out action scenes with plenty of punch and bite. It's an exciting listen, but impressively it rarely lapses into hardness, even when you push the volume towards maximum. The built-in woofer's taut bass notes lend weight to big action beats, but also underpin voices and music with subtle depth.

Naturally, given its smaller size, the Stream Base doesn't fill the room as easily as the other soundbases on test here. The soundstage can be reasonably big and expansive, but requires a relatively high volume to achieve it. The Home Theater mode does little to help matters.

With its elegant design, slick network features and refined sound, the Cabasse is a class act, but its smaller soundstage and limited scale will sway owners of big TVs and large rooms.

SPECIFICATIONS

DRIVE UNITS: 2 x tweeters; 4 x mid/bass drivers; 1 x woofer
AMPLIFICATION: 120W
CONNECTIONS: Optical digital input; 3.5mm minijack input; USB port; Ethernet
DOLBY TRUEHD/DTS-HD MA: No/No
SEPARATE SUB: No
REMOTE CONTROL: Yes
DIMENSIONS: 650(w) x 86(h) x 290(d)mm
WEIGHT: 8.6kg
FEATURES: aptX Bluetooth; Wi-Fi; DLNA streaming; Spotify, Deezer, Qobuz and TIDAL via Awox Cabasse Stream Control app; Hi-Fi & Home Theater modes; hi-res audio streaming

Canton DM100

The biggest model in Canton's range is tailor-made for the new generation of largescreen TVs



AS THE LARGEST soundbase in Canton's range, the DM100 is designed for big TVs and spacious living rooms. Like the smaller DM55 and DM75, the DM100 is built like a tank, with a thick glass top plate and super-sturdy aluminium bodywork. Rigid speaker mesh adorns the sides, while thick feet provide effective vibration damping. It's every bit the premium proposition.

If this all sounds a bit workmanlike, rest assured that the DM100 is crafted with great panache. Curved corners, glossy panels, flashes of silver – Canton has created a speaker that looks lovely.

There's a useful display panel on the front and a tiny power LED. Because it only displays three digits at a time, the heavily abbreviated setup menu takes some getting used to. The readout disappears when idle, leaving you with a blank, clutter-free fascia that won't draw your eye from the TV screen.

Measuring a metre wide, the DM100 will happily accommodate TVs from 55in upwards provided they weigh no more than 40kg. You'll be hard pressed to find another soundbase the gives you this much top surface.

The DM100 doesn't provide any HDMI sockets, which is a bone of contention at this price, but there are optical, coaxial and analogue phono inputs, plus a sub output. On the wireless side there's aptX Bluetooth but no Wi-Fi, ruling out any nifty multiroom or network music streaming features.

Canton makes up for it with an impressive speaker array, including no fewer than 10 drivers – two tweeters, four midrange drivers and four subwoofers. That's two more than the DM75 and four more than the DM55, and there's more power under the bonnet too. This thing is born to fill cavernous media dens.

The unit offers Stereo and DTS TruSurround presets, plus a Voice mode that gives dialogue a boost.

There's a superb remote in the box, but you probably won't use it – Canton's IR learning function lets you stick with your TV's zapper.

Expansive soundstage

The DM55 and DM75's sound quality has already cemented Canton's place among the soundbase elite, but the DM100 takes things to the next level. The most remarkable thing is how this slim, unassuming box manages to produce such a huge, deep soundstage. Its sheer size and scope seem to defy physics.

Stars of the show are the woofers, which produce the sort of rich, engulfing bass that normally only comes from an external bass bin. Blockbuster movies benefit from enormous, gut-wrenching explosions and meaty gunshots. When it rumbles, you can feel it in your chest. In fact it can be too overpowering at times, getting a little wild during particularly chaotic scenes – try playing with the bass level to find the right balance.

What also stands out is the Canton's sumptuous detail reproduction. The tweeters render HF effects with a smooth, refined character and tease out sonic intricacies. The texture and precision of the sound is stunning. A robust midrange balances this nicely, making narration sound clear and full bodied. The Surround mode does a fair job of spreading the soundstage even further, but the result isn't quite as wide as you might expect.

The main quibble I have with the Canton's performance is the disparity between quiet and loud parts of some movies. I had to crank up the volume to hear certain passages of dialogue, only to be jolted out of my seat when something explodes. It's a bit better with Voice mode activated, but I still found myself fiddling with the remote.

Minor niggles aside, the DM100 is a superb soundbase, offering an elegant design and a room-filling sound. >

SPECIFICATIONS

DRIVE UNITS: 2 x tweeters; 4 x midrange; 4 x subwoofers
AMPLIFICATION: 200W
CONNECTIONS: Optical digital input; coaxial digital input; analogue phono input; subwoofer output
DOLBY TRUEHD/DTS-HD MA: No/No
SEPARATE SUB: No
REMOTE CONTROL: Yes
DIMENSIONS: 1,000(w) x 69(h) x 330(d)mm
WEIGHT: 12.1kg
FEATURES: aptX Bluetooth; adjustable lip-sync; DTS TruSurround; Dolby Digital; IR learning function; Voice mode; Hotel mode; Eco mode; IR delete function

Geneva Model Cinema

Geneva isn't a household name, but on the basis of this soundbase perhaps it should be...



GENEVA BRINGS A touch of Swiss sophistication to our test with its debut soundbase. The audio equivalent of a Hublot watch, this thing is precision-engineered for maximum listening pleasure.

The Model Cinema is a luxurious, high-end affair – its solid MDF cabinet is covered in black or white matt paint, which grants a sense of elegance. The look is minimal, but a couple of classy features elevate it above the norm, such as touch-sensitive controls and a raised dome in the front speaker mesh.

A large red LED display adorns the front panel, showing the volume level and selected input. It automatically dims to match the light in your room so it doesn't draw your eyes away from the screen. Clever.

Four thick feet with rubber bases provide a solid foundation. The maximum supported weight is a relatively low 25kg, which rules out the largest TVs but proved fine for my 55in set.

In terms of socketry, this comes from the 'single cable' school of thinking, offering optical input for connection to a TV but no HDMI ports. However there is also a coaxial port, plus a 3.5mm minijack input.

Features are thin on the ground. There's built-in Bluetooth for easy music streaming and Geneva's catchily-titled Embracing Sound HD, which aims to expand the soundstage width. A Voice mode boosts dialogue and TotalVolume equalises volume levels between different sources and programmes.

Of greater significance here is the driver lineup, which includes four 2in midrange/tweeter units and a single 5.25in woofer, built into three individual acoustic chambers.

Geneva hasn't specified separate tweeters like Canton and Cabasse, but all five drivers are individually worked by Class D amplifiers. Total claimed power is 120W.

With no multiroom features or smartphone apps to worry about, operation is simple. The remote is top-drawer, sharing the main unit's classy build quality and offering a thoughtfully arranged layout. Dedicated bass and treble controls let you tweak the sound easily.

Subtlety and power combined

Despite its slender dimensions, the Geneva musters a massive, room-filling sound that brings movies to life in spectacular fashion. Huge dynamics and lashings of bass make action scenes sound dramatic and involving. It can go scarily loud, yet maintains intelligibility at lower levels, demonstrating amazing subtlety and range.

The Geneva attacks midrange effects like a starved lion. Snappy gunshots and fiery, full-bodied explosions keep excitement levels high, but they're tightly controlled and don't strain the eardrums. It's open and expressive but skilfully smoothes off any harsh edges, leaving you with a clean, natural sound.

Voices are articulated with detail and authority, and despite the lack of dedicated tweeters, the 2in drivers do a good job with high frequencies. The Geneva demonstrates levels of insight that some of its similarly-priced rivals can only dream of.

SPECIFICATIONS

DRIVE UNITS: 4 x 2in mid/HF drivers; 1 x 5.25in subwoofer
AMPLIFICATION: 120W
CONNECTIONS: Optical digital input; coaxial digital input; analogue phono input; 3.5mm minijack input
DOLBY TRUEHD/DTS-HD MA: No/No
SEPARATE SUB: No
REMOTE CONTROL: Yes
DIMENSIONS: 700(w) x 100(h) x 350(d)mm
WEIGHT: 9kg
FEATURES: Voice mode; Bluetooth; Embracing Sound HD; auto dimming display; Total Volume

Treble isn't thin or spitty either – it has a rich, silky quality. There's an even balance across the frequencies that results in a pleasing sense of cohesion.

The sense of scale is helped by the Herculean efforts of the woofer. This digs deep and punches hard, but doesn't boom or chuff when faced with a massive LFE. Not only is the Geneva's soundstage big and authoritative, it's also beautifully organised, allowing individual effects and voices to be heard amid the chaos.

I can't speak highly enough of the Model Cinema's performance. Judged on sound quality alone, it's a must-buy. The only things that might make you think twice are the limited feature list and lack of HDMI ports. Otherwise, this is easily recommended.

Philips Fidelio XS1

This slender soundbase arrives with a separate subwoofer, promising a performance boost



SOUNDBASES AREN'T NORMALLY known for their looks, but with the XS1 Philips has created a thing of unexpected beauty. The elegant glass top and grey aluminium grille around the perimeter combine to neat effect, but it's the wafer-thin dimensions that really seal the deal – at 40mm high you'll barely notice it under your TV. Build quality is brawny enough to piggy back TVs up to 44kg, with sizes ranging to 65in.

Clutter is kept to a minimum. There's an NFC point on top, plus power, input and volume controls on the side, although placing them towards the back isn't particularly convenient. A useful dot matrix display on the front shares input, sound mode and volume info.

Philips squeezes a generous amount of sockets onto the slim rear panel. There's an HDMI input (v1.4) and ARC-compatible output for those who want to run a Blu-ray deck through the XS1, plus optical and coaxial jacks. It even throws in and analogue phono input, joined by 3.5mm minijack and side-mounted USB port. The latter lets you play MP3 and WMA from flash drives.

Unusually, the XS1 comes with a wireless subwoofer, which adds more clutter to your living room than one-box rivals – but from a performance perspective it's probably a good idea given the XS1's restricted cabinet volume.

It's an odd-looking rectangular box, but this shape gives you a couple of installation options. Turn it horizontally and you can slide it under your sofa; stand it upright on the supplied stand and you can place it next to a TV rack. A great idea in theory, but awkward in practice. It pokes out past my TV stand and it's too thick to slide under my sofa...

The XS1 is a 3.1 system with six 'racetrack' drivers, four on the front and one on each side. The central pair of front drivers form a dedicated centre channel for dialogue, while the side-mounted drivers aim to spread the soundstage wide. Each driver receives 20W, while the sub's power output is rated at 200W, firing bass from dual 6.5in woofers.

There are a few features to play with, including aptX Bluetooth, DTS/Dolby Digital decoding and four sound modes – Music, Voice, Night and a Movie mode that adds a virtual surround effect.

Slim and sonic

Fire up the XS1 and the size of its soundstage may surprise you. Despite its slim build, its sound floods the room and brings depth to those big blockbuster moments.

With an external subwoofer supplying the deepest bass notes, the XS1 could have an advantage over its rivals, but without decent integration it could end up being the weak link. Thankfully it blends well with the soundbase. Explosions are weighty, gunshots punch and voices have a rich underbelly. You can adjust the bass to find the right level if it sounds boomy, but out the box there's a pleasing level of cohesion.

Meanwhile the soundbase drivers convey midrange effects with gusto, adding snap and attack. The result is an involving sound – even at lower listening levels – with a clear, direct presentation.

The dedicated centre drivers ensure intelligible, full-bodied dialogue, and there's plenty of detail here too. Top-end textures and nuances are sought out.

Negatives are minor. Nudge the volume towards maximum and the soundbase's composed demeanour makes way for a touch of brashness in the midrange. It's also a little too reliant on the subwoofer – the XS1's built-in drivers muster very little bass of their own, in stark contrast to the deep, full-range sound offered by the Canton and Geneva.

That aside, the XS1 is a fine soundbase, blessed with generous features, dashing looks and an engaging performance. >

SPECIFICATIONS

DRIVE UNITS: 6 x full-range racetrack drivers; 2 x 6.5in woofers (external sub)
AMPLIFICATION: 320W (6 x 20W, 200W sub)
CONNECTIONS: HDMI input; HDMI output (ARC); optical digital input; coaxial digital input; 3.5mm minijack input; USB port
DOLBY TRUEHD/DTS-HD MA: No/No
SEPARATE SUB: Yes (wireless)
REMOTE CONTROL: Yes
DIMENSIONS: 730(w) x 132(h) x 331(d)mm
WEIGHT: 5.3kg
FEATURES: aptX Bluetooth; NFC; Dolby Digital & DTS; centre channel; treble/bass control; Movie, Music, Night and Voice modes; Virtual Surround Sound

Yamaha SRT-1500

This soundbase doubles as a multiroom speaker and aims to wrap you up in 5.1 audio



SOME SOUNDBASES, LIKE the Canton and Geneva, are straightforward speaker upgrades with basic features and connections. Others are full-on audio hubs that throw in everything and the kitchen sink. The SRT-1500 is one of the latter and absolutely teems with features.

A highlight is multiroom functionality courtesy of Yamaha's MusicCast system, meaning you can play music from Spotify, Napster, Juke, web radio and DLNA devices through Yamaha's smartphone app and zap it to the SRT-1500 and other MusicCast speakers in a multiroom setup. And with AirPlay and Bluetooth on board, you aren't stuck for wireless streaming options.

Equally alluring is Yamaha's Digital Sound Projector technology, which aims to offer true 5.1 sound. Eight 1.1in drivers along the front of the unit bounce sound beams off walls towards your lugholes. You can adjust the beams to get the optimum effect in your room and there are three settings for different installations. The beam drivers are backed by six woofers, split between front and bottom.

The scary thing is that I've only scratched the surface of the spec sheet. There's Dolby Digital and DTS decoding, five DSP modes, a Clear Voice dialogue booster, hi-res audio support and Bluetooth output functionality for headphone listening. And then there's the socketry, the best of all five soundbases on test. The HDMI input and output support 4K 60p passthrough and HDCP 2.2, plus there's a choice of optical and coaxial digital inputs. Ethernet, 3.5mm minijack input and a subwoofer output complete the lineup. Connections are housed in a recess on the back, concealed by a neat removable cover.

The Yamaha may have the upper hand in terms of features, but design is a different matter. It's not ugly *per se*, but lacks the elegance of the glass-topped competitors. Thankfully the MDF cabinet is sturdily built, able to support TVs up to 40kg, while the 78cm width creates enough surface area for a reasonably big TV.

The front panel interface uses a row of small lights instead of a text-based display. From the sofa it's virtually impossible to tell which functions you've selected, and if you want to switch settings you have to decipher a pattern of blinking lights.

Otherwise the SRT-1500 is easy to use. The MusicCast app is slick and intuitive and the remote is well laid out.

Beam me up, Yamaha

In use the SRT-1500 offers a powerful, lively sound. There's enough puff to fill a reasonably large living room and its snappy, energetic approach in the mids and treble guarantees maximum movie thrills.

The effectiveness of the sound beam technology is dependent on the layout of your room – furniture blocks the beams and corner placement is a no-no – and other Yamaha products with more drivers are more efficient, but even if it's not a total success the Yamaha still delivers an expansive soundstage, with effects emerging from beyond the confines of the cabinet. This immersive output pulls you into the movie in a way that rivals can't.

A weighty bass response rules out the need for an external sub. The onboard woofers thump and rumble enthusiastically during boisterous action scenes, while demonstrating decent agility with rhythmic bass sounds. There could be more subtlety and shape perhaps, but on the whole bass is well integrated and makes your TV speakers sound like tin cans on string. The SRT-1500 also conveys a healthy level of detail. Its aggressive tone can also get a bit spiky, but never unpleasant.

A do-it-all soundbase then, and for many the feature set will make up for the performance niggles highlighted.

SPECIFICATIONS

DRIVE UNITS: 8 x 1.1in beam drivers; two 1.5in x 4in woofers; 2 x 3.5in subwoofers
AMPLIFICATION: 140W
CONNECTIONS: HDMI input; HDMI output (ARC); optical digital input; coaxial digital input; 3.5mm input; sub output; Ethernet
DOLBY TRUEHD/DTS-HD MA: No/No
SEPARATE SUB: No
REMOTE CONTROL: Yes
DIMENSIONS: 780(w) x 77(h) x 370(d)mm
WEIGHT: 9.3kg
FEATURES: MusicCast; Bluetooth in/out; Digital Sound Projector tech; Dolby Digital/DTS decoding; DSP modes; Clear Voice; hi-res audio support; HDCP 2.2

Final standings

THE BATTLE FOR premium soundbase supremacy is over, and we have three models in joint-third – the Yamaha, Philips and Cabasse.

Yamaha's SRT-1500 deserves praise for its best-in-class feature list, which includes multiroom streaming, sound beam technology, AirPlay, MusicCast and much, much more. But features alone aren't enough to earn it top marks and sadly its sound quality isn't quite up there with the best. Sure, it's powerful and exciting, but lacks the refinement, poise and subtlety of its rivals.

Similarly, the Philips XS1 offers a decent range of features, and is sure to win plenty of fans with its design. But the need for an external sub defeats the object of a soundbase somewhat, and its sound is a little brash at high volumes. It does, however, offer a much bigger soundstage than you'd expect from such a slim unit.

Cabasse's Stream Base has all the makings of a classic – elegant design, an audiophile spec and network functionality – but the compact dimensions rule out larger TVs and puts a limit on scale and soundstage size. But if your TV is 42in or less, or you can mount your screen away from its top-plate, then we strongly urge you to give it a whirl.

Standing out from the crowd are the Canton and Geneva. What they lack in features and sockets they make up for in sheer sonic luxury – these are masterful performers that muster a massive soundstage and deep, punchy bass without an external subwoofer. They shed light on sonic intricacies that others gloss over.

Asked to pick a winner and the Geneva Model Cinema just edges it. It boasts a little more poise and control than the Canton, and slightly better clarity at lower volumes. The Canton's bass output can be unruly at times, and we found ourselves fiddling with the volume more often than usual. However, that shouldn't detract from the DM100's astonishing performance. It offers a bigger soundstage than the Geneva and caters for bigger TVs ■

HOME CINEMA Choice TEST WINNER



HCC VERDICT

Cabasse Stream Base → £450 → www.cabasse.com	★★★★½
Canton DM100 → £530 → www.cantondm.co.uk	★★★★½
Geneva Model Cinema → £550 → www.genevalab.com	★★★★½
Philips Fidelio XS1 → £500 → www.philips.co.uk	★★★★½
Yamaha SRT-1500 → £600 → www.yamaha.co.uk	★★★★½



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On the mov(i)e

Jamie Carter enjoys cinema on the fly with this smart-designed, crowd-funded DLP projector





IT'S CYLINDRICAL, IT travels well, and it's battery-powered. Has JmGO just reinvented the home cinema projector with the svelte-looking View? Outwardly, perhaps, but I've lost count of the number of times I've listened to PJ manufacturers tell me they've taken the wheel back to the drawing board...

The JmGO View is about the same size as the Bluetooth speakers that advertise themselves as being 'great for the beach'. Okay, so there's little chance of this projector getting onto sand (though some of the marketing blurb – the projector has just completed a successful crowd-funding session on IndieGoGo – does recommend you 'watch movies under the stars'), but it does have much in common with portable squawkers. For starters, the JmGO View has 4W speakers on either end, and supports Dolby Digital Plus and DTS TruSurround.

And it speaks wireless languages, too – Bluetooth, Wi-Fi, Miracast and Happycast. The JmGO View is a *de facto* wireless speaker, and thoroughly simple to set up and use. Tunes can be streamed to it for up to eight hours before the battery runs down.

Beyond these sound ambitions, the JmGO View wants to be a smart portable theatre. It's powered by a DLP chipset from Texas Instruments, its lens capable of projecting a 180in image. However, the most brightness it can muster is a mere 250 Lumens – there's a simplistic choice of 'normal' and 'bright' settings – and while that proves just about enough in a blacked-out room, it does mean this otherwise versatile projector hamstrings itself from the off.

AV INFO

PRODUCT: Travel-friendly DLP projector

POSITION: JmGO's smallest, most portable projector

PEERS: ZTE Spro 2; Lenovo Yoga Tab 3 Pro

The PJ offers tripod support, courtesy of a thread on its undercarriage. It sounds crazy in a home cinema scenario, but a tripod proved preferable to the provided plinth, a concave, silicon-covered aluminium strip that magnetically grips the JmGO View. It seems such a clean design concept at first, but making minor adjustments to the positioning of the projector to retain a level horizon gets tiresome, and it proved impossible with a USB thumb drive shoved into the rear. A tripod is much easier; shame that the thread is sited off to one side of the chassis, making it hard to get it balanced.

In addition to that USB input and wireless connections, the View has a lone HDMI jack.

Files can be transferred to the PJ's 16GB built-in memory. Already installed on its Android 4.4.4 user interface are apps for YouTube, Netflix, Facebook, Skype, Ted, Twitter and XBMC. Apps for Android and iOS devices are expected soon, though neither were ready at the time of the test.

It might technically manage a 180in picture, but I stopped at 60in to keep the 1,280 x 720 pixel image looking sharp enough. That's with the JmGO View about the same distance from the screen, with a dose of both digital zoom and keystone correction eventually employed to get a dead-on picture.

A touch of a button on the slim remote control (not backlit) activates automatic electro-motion focusing. A manual focusing wheel would be preferable, but after a few attempts I did get a sharp image. The UI is easy to navigate, while JPEGs, MP4, AVI, MKV and MOV videos, plus various music files, worked fine first time.

Gravity on Blu-ray via HDMI proved the JmGO View can craft decent images and sound, though the 3D version has some issues. Though clean of crosstalk and boasting plenty of depth, the picture can ill afford the drop in brightness that those active shutter spex bring.

Different take

Although the JmGO View is a genuinely different take on projection in the home, it brings with it a new problem: battery life. The huge 15,600mAh battery inside constitutes most of its weight, and if it was powering a smartphone it would go on for weeks. But this is home cinema, and sadly it only manages to keep going for between 2.5 and three hours. For me, that's not enough. Furthermore, any upgraded version should consider Full HD resolution and an extra burst of brightness.

Aside from the excellent, inventive design, perhaps the most impressive aspect of the JmGO View is its sound quality, which is as loud as it is clear. That's rather ironic for a product that does look more like a speaker than a projector, but there is something revelatory about the JmGO View; after years living with dusty, heavy AV racks in otherwise nicely decorated rooms, the sight of a projector on a tripod is one to behold. Why did no one think of this before? ■

SPECIFICATIONS

3D: Yes. Active 3D (glasses optional)
4K: No. 1,280 x 720
CONNECTIONS: 1 x HDMI; 1 x USB 2.0; 1 x tripod thread
BRIGHTNESS (CLAIMED): 250 Lumens
CONTRAST (CLAIMED): 1,000:1
DIMENSIONS: 229.6(w) x 72.4(h) x 72.4(d)mm
WEIGHT: 1kg
FEATURES: Wi-Fi; Bluetooth; Miracast; Happycast; compatible with Android & iOS devices; in-built stereo speakers; 180in maximum image size; 15,600mAH battery; three hours video playback; eight hours music playback; 16GB storage; Texas Instruments DLP 0.3 WVGA chipset; 1GB RAM

The View is designed to sit either on a cradle stand or mounted on a tripod

HCC VERDICT ★★★½☆

JmGO View
→ £420 → www.jmgo-view.com

WE SAY: The portability, form factor and sound quality certainly impress, but a lack of image punch limits this PJ's appeal



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Zemi Aria

Adrian Justins pops into the Apple Store and comes away with this designer wireless speaker

THE ZEMI ARIA is the first mass-market product from Francesco Pellisari, the Italian designer behind NAC Sound, which makes extraordinary-looking ceramic speakers that are priced in multiples of £10,000.

This £500 wireless speaker has an intriguing design. There's a stainless steel grille that catches the light, and when combined with the largely spherical form factor and highly-rigid ABS plastic construction, the bowling-ball sized Zemi Aria looks the business, if a bit showy.

The speaker proffers AirPlay and aptX Bluetooth connections. Behind the metal grille, and cloth cover beneath it, you'll find a 6in fibreglass woofer cone in the centre plus two 1in dome tweeters, from Danish driver specialist Scan-Speak, at the edges.

Onboard power is suggested to be a more than reasonable 125W (75W woofer, 2 x 25W tweeters) and the frequency response is quoted as 45Hz-20kHz. A chunky remote made from solid brushed metal is supplied, with power and volume controls. There's no display, just LED status lights behind the grille.


Don't like the grille? There's a cloth cover behind

Via an AirPlay hookup the Aria impresses. David Bowie's *Lazarus* is rich and resonant. It's pretty airy considering it's coming from a single cabinet, but no substitute for stereo playback – and nor can two Arias be paired for two-channel performance. The speaker is as powerful as most would want in any small/medium-sized room, although I discovered that removing the grille gave a tad more punch to the mid-range and more high-frequency energy.

The Aria could also work as a soundbar alternative thanks to the provision of an optical input but while it does a good job of separating dialogue from effects and musical scores, it's shape and size make it difficult to position centrally beneath a screen.

As a wireless music speaker, this is pleasing to listen to and oh-so stylish – which is probably why it's stocked in the Apple Store. Pricey, though ■

HCC VERDICT ★★★★½

Zemi Aria
→ £500 → www.zemiaria.com

WWW.ONEFORALL.CO.UK/£50

One for All SV 1820

This may be just what you need to keep an old music system in play, says **Benny Har-Even**

I HAVE A Monitor Audio radio sitting in my kitchen that has given me sterling service as an audio companion for several years. It is internet connected but the interface is so awkward I tend to stick with DAB for entertainment. Enter the One for All SV 1820, priced at a reasonable £50, which has been able to turn said radio into a Bluetooth speaker.



The unit has phono, 3.5mm and optical outs

This small, inoffensive puck-sized device connects to your audio gear via 3.5mm cable, while a phono converter is included for hook up to your amp. There's an optical output too, although a cable isn't supplied.

Internally, there's a 192kHz/24-bit Wolfson DAC and support for the higher-quality aptX Bluetooth codec.

Getting set up is very easy. Between the postman handing it over, to me listening to music through my smartphone on the Monitor Audio radio, was a matter of three minutes. It requires a spare power socket but it's just a matter of plugging it in, connecting it up via your cable of choice and then pairing it with your source via Bluetooth. And should you be so inclined you can connect three devices simultaneously in a 'Party mode', which allows each to take over from the other.

In use, the sound output proved crisp and clear. Dropouts occurred at a distance but closer by the connection was solid. Connected to the phono inputs of my Marantz amplifier, the bass in Prince's *Sign 'O' the Times* sounded fuller and richer compared to the optical input – a win for the amp's analogue DAC.

All in all, the SV 1820 works very well. If you have a system that sounds great but could do with a wireless connectivity boost this is a recommended purchase, especially at its £50 price tag ■

HCC VERDICT ★★★★½

One for All SV 1820
→ £50 → www.oneforall.co.uk

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DYNAUDIO

Thank EQ, ELAC

Ed Selley auditions a heavyweight woofer that lets you tune its output via a smart device app. Is this technology for technology's sake, or a game-changing idea?



A gloss white version of the SUB 2070 is also available

HOME CINEMA Choice RECOMMENDED

FOR THE MOST part, subwoofers tend to be simple beasts. Drivers might be constructed using more exotic materials and mounting technology, but subs are still generally a big, solid box that lets a large woofer and hefty amplifier get to work producing low frequencies. And at first glance, ELAC's SUB 2070 doesn't look like it deviates from this path, yet look a little closer and you'll see things aren't all they appear.

First up, the drivers. Subs with opposing units are far from uncommon, but ELAC's decision to mount the two 10in drivers in the 2070 in vertical rather than horizontal opposition is unusual. Both drivers are powered by a 600W BASH-type amplifier, and work in a push-pull configuration. ELAC claims a low-end reach that extends to 18Hz.

Effort has been made to give the SUB 2070 a bit of aesthetic appeal, with chrome details and rounded edges. The gloss black or white finishes feel modern, and this sub should be a good match to all but the most retro speaker packages. It's fairly compact, but – at 32kg – weightier than you might expect.

Take control

Where the SUB 2070 really differs from most rivals is the control interface. The back panel only has a power switch by way of controls, with no volume or crossover settings on offer. Why? Because when you power the 2070 on for the first time, it will seek to make a Bluetooth connection with an Android or iOS device that's running a freely downloaded ELAC app, and expect you to control it from there.

With the sub talking to the app (something it refused to do with my Motorola Android handset but worked fine with a Google Nexus 5 – Bluetooth 4.0 is required), the ELAC becomes a rather clever beast. You can use the phone's microphone to perform an EQ setup, use the app to adjust the volume – as well as mute it – and choose between four pre-programmed modes, named Normal, Cinema, Music and Night.



Providing the low-end to five Elipson Planet M speakers via a 90Hz crossover with a basic EQ sweep performed, the SUB 2070 manages to impress from the outset even before you start tinkering with the app. In *Star Wars: The Force Awakens* it powers through Finn and Rey's escape in the Millennium Falcon with assurance and ability. ELAC's sub starts and stops with commendable dexterity, and this means that the frantic activity onscreen retains its sense of energy and relentlessness.

This agility is also present and welcome in my regular demo disc, *Whiplash*. This drumming drama is not a test of truly seismic bass, but with a 90Hz crossover, the SUB 2070 is called upon to be a meaningful part of the basslines of the soundtrack. There is enough instrumental detail in the ELAC's performance so that the effect is of five speakers rather than five speakers and a big unwieldy slab of bass.

I found that where the app proved its worth is with films like *Pacific Rim*. Being able to gently wind its level back to better handle this bass-fest is undeniably useful, and while I didn't find huge differences between the pre-programmed EQ settings, the Night preset is handy, keeping you in bass thrills where you might have to turn another sub off. Comparing the ELAC after the EQ's been run to using it without also suggests that this feature is worth the hype, especially if the AVR you're using has limitations to its bass EQ system. Two measurements – one close to the sub, the other at your listening position – are taken before ELAC's EQ works to iron out discrepancies created by room reflections/standing waves. In my room, the EQ'd response seemed to be tighter with less room interaction.

Flexible friend

The SUB 2070 is not cheap, rather heavy, and faces stiff competition, but the control app lends it a degree of flexibility that could be just the ticket in more challenging rooms and spaces. Combined with a strong performance, you have a device that merits your consideration ■

SPECIFICATIONS

DRIVERS: 2 x 10in low-frequency drivers, mounted in a vertically-aligned push-pull configuration
ENCLOSURE: Sealed
FREQUENCY RESPONSE: 18Hz-180Hz
ONBOARD POWER: 600W BASH-type amplifier
REMOTE CONTROL: No, but control via free app (including EQ) is provided
DIMENSIONS: 360(w) x 475(h) x 385(d)mm
WEIGHT: 32kg
CONNECTIONS: 2 x line-level phono inputs; 3 x stereo speaker-level inputs; 1 x ELAC Wireless Link interface

AV INFO

PRODUCT: Dual 10in active subwoofer with app-based EQ

POSITION: The SUB 2090 uses bigger drivers and a more powerful amp

PEERS: REL S/3 SHO; Monitor Audio W12

HCC VERDICT ★★★★½

ELAC SUB 2070
→ £1,300 → elac.com

WE SAY: A clever subwoofer that offers impressive performance and useful app control, albeit at a slightly steep price

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HOME CINEMA Choice BEST BUY

Another brick in the budget PJ wall

ViewSonic's Pro7827HD may be an entry-level home cinema PJ, but you'd never guess it from the visuals, reckons **Martin Pipe**

AV INFO

PRODUCT: Single-chip Full HD DLP projector with 3D support

POSITION: Roughly midway in ViewSonic's unfathomably comprehensive range of projectors

PEERS: Acer V7500; BenQ W1110

THE LATEST IN ViewSonic's LightStream range, the Pro7827HD certainly packs in the features. This modestly priced DLP single-chipper is evidently aimed at the home cinema crowd, with its native 3D support, REC.709 picture preset, ISF modes and eye-catching claimed contrast ratio of 22,000:1.

Yet – like the Optoma GT5000 reviewed elsewhere this issue – its remote control is equipped with a laser pointer. Perhaps useful to film buffs who want to spotlight continuity errors to their chums. This sort of thing is, of course, common in the world of PJs sold as office gear.

Despite this – and, for that matter, a built-in mono speaker and presentation timer – home cinema is definitely where the Pro7827HD is at. It's based around a Full HD DarkChip3 DMD with TrueBlack enhancement, used in conjunction with a RGBRGB colour wheel that ViewSonic refers to as Cinema SuperColor.

Then there's the connectivity of this fairly compact matt-black unit. Sure, there's a businesslike VGA/D-Sub terminal for PCs, complete with loopthrough output. But also on offer are twin HDMI inputs, with integrated MHL support, in addition to composite, component and (a fast-disappearing sight, this) S-video terminals.

Two HDMIs? Not quite. A compartment to the right of the lens controls is concealed by a cover; remove it and you'll discover a third HDMI port, alongside a trailing micro-USB power cable. It's intended for ViewSonic's optional wireless HDMI upgrade, the £100 WPG-300. But it can instead accommodate other devices of similar dimensions; I used a Roku Streaming Stick, for example, giving the Pro7827HD a smart TV garnish (see *Partner With*, opposite). Plug it all in, clip the cover and you'd never know it was there. Just remember to switch on the USB power (buried in the MHL Settings menu) or it won't work.

On the menu

The Pro7827HD carries a user interface that positively brims with options, most of which influence the image thrown. There are the usuals – rear/front, table/ceiling, 3D settings, eco lamp mode, brightness, contrast and so on. Vertical lens shift is offered, as well as digital vertical and horizontal keystone correction as a last resort for those who can't position their PJ optimally. There's also the unusual ability to 'distort' corners so that an image appears uniformly rectangular (called 4 Corner Function). Other menu options include a sleep-timer and wall-colour compensation should you be throwing the ViewSonic's images onto, say, a light blue wall. I'm sure someone is.

Then we have the colour modes, including the aforementioned REC.709 option. Full control over

parameters like colour temperature and gamma are provided. Each input can remember different permutations of settings, so you can optimise pictures for the connected source. There are ISF Day and Night modes should you be getting the PJ professionally calibrated – a password is needed to get into the relevant setup menus to prevent twiddling by the ISF-uncertified. AV tweakers will, however, appreciate that the password is given in the manual...

The ViewSonic offers a medium-throw lens. To give you some idea, a 3m (diagonal) 16:9 picture needs a minimum projection distance of 3m. So unless you have a particularly large screen, 'overlap' problems might be encountered in some scenarios – even with minimum zoom. You can use the electronic zoom's reduction feature to make the picture smaller. But that kills resolution.

Another limitation (for occasional users, at any rate) is that only one of the three feet (the front one) is adjustable. On the plus side, ViewSonic supplies a neat plastic cover that fits the rear panel, hiding all the connectors.

In your own time

Although no doubt of limited interest to *HCC* readers, the onboard audio system was surprisingly effective – when, that is, it worked properly. On other occasions the onscreen displays had a mind of their own. Suddenly, keystone would start adjusting itself of its own accord. A second review

> 'This is a damn fine effort – not so long ago you would have paid thousands to enjoy visuals of this standard'

sample was free of such foibles. Yet although lag is short (around 50ms), both units could take time to lock into a source; onscreen 'source search... detected' messages became annoying.

But I found it worth persisting, as this projector punches way beyond its weight in performance terms. Using the REC.709 setting, combined with the eco lamp mode, black levels really impress while fan noise is reduced to an acceptable whirr. *Star Wars: The Force Awakens*, a reference-quality Blu-ray [*and one that all* HCC *staff seem to be using as demo fodder – Ed*], is done full justice here – whether it's the intricacy of the Jakku Starship Graveyard's scuttled Imperial Star Destroyers, or the Millennium Falcon speeding against a backdrop of inky expanse punctuated by countless stars. Plenty of action here, and while the Pro7827HD isn't immune to movement judder it seldom intrudes.

The rainbow effect came as a complete surprise, because – for me, anyway – there was so little of it to distract. A neat trick for a single-chip DLP model.

The Force Awakens' Imperial rally, meanwhile, reveals plenty of fine detail and cinematic punch, and not just in the massed Stormtroopers. The crimson-red backdrop (a nod to Nazi Germany) is portrayed with a film-like vividness. In general, bright colours are handled with aplomb. Even subtler flesh tones also fare well, especially after careful calibration. In short, this is a damn fine effort; not so long ago, you would have paid thousands to get visuals of this standard.

While no 3D spex are in the box, I can confirm that the Pro7827HD will work quite happily with DLP-Link active-shutter glasses; an Acer pair I had to hand delivered excellent results. The pan around the spaceship's exterior in Chapter 3 of *Prometheus* is both acceptably smooth and offers palpable, immersive depth. The star-map sequence later in the movie saw the complex patterns resolved with panache.

Enjoy the view

ViewSonic should be congratulated for the performance of Pro7827HD – set it up correctly, and its pictures are clean, dynamic, tonally balanced and unfatiguing over long viewing periods. The only serious complaints I have are practical matters – source settling and a cooling fan that remained active long after the projector was shut down. The specification here is great, there's plenty to play with and that hidden HDMI input is a neat touch. Good work ■



SPECIFICATIONS

3D: Yes. Active (glasses optional) ***4K:*** No. 1,920 x 1,080 Full HD ***CONNECTIONS:*** 3 x HDMI (v1.4); USB (mouse emulation/power); RS232; 12V trigger; composite video; component video: S-video; VGA (15-pin D-sub) input/output; 2 x 3.5mm audio inputs; 3.5mm output ***BRIGHTNESS (CLAIMED):*** 2,200 Lumens ***CONTRAST (CLAIMED)***: 22,000:1 ***ZOOM:*** 1.3x (optical) ***DIMENSIONS:*** 316(w) x 104(h) x 228(d) mm ***WEIGHT:*** 2.6kg

FEATURES: DLP DarkChip3 imaging device; vertical lens shift; ISF Day and Night modes; REC.709 preset; RGBRGB colour wheel; 3D DLP-Link; throw ratio 1.1-1.5:1; MHL support; 10W speaker system; 'eco' and 'super eco' modes; life of lamp up to 6,500 hours in 'super eco' mode

PARTNER WITH



ROKU STREAMING STICK: Available for £40 approx, Roku's HDMI stick grants you much of the smarts of a Roku media player but without the need to find a wall socket, instead charging from a handy USB port (like that offered by the ViewSonic PJ)

1. **The Pro7827HD's lamp-life extends to a claimed 6,500 hours in 'super eco' mode**

2. **Top panel controls give quick access to source and colour mode should you misplace the remote**

HCC VERDICT ★★★★½

ViewSonic Pro7827HD

→ £600 → www.viewsoniceurope.com

WE SAY: This well-priced projector offers a lot when it comes to setup and connectivity, and this is joined by an excellent Full HD performance. Definitely one to shortlist



Multi-talented Marantz marvel

With support for Dolby Atmos and DTS:X, plus the option of Auro-3D, the Marantz SR7010 covers all the next-gen audio bases. And that isn't all it can do. **Danny Phillips** reports

HOME CINEMA TECHNOLOGY moves faster than Speedy Gonzales with a jet pack. No sooner have you invested in some cutting-edge kit than the next 'big thing' comes along to render your new toy obsolete. Yet with the Marantz SR7010 you probably don't need to worry. This receiver is *au fait* with so many technology standards that it should comfortably see you through the next few years and beyond. Fingers crossed.

First of all, the AVR's HDMI inputs are all v2.0a with support for HDCP 2.2, meaning it can pass a 4K HDR signal from an Ultra HD Blu-ray player (HDR 10, at any rate. Dolby Vision is a different matter – see *Feedback*, p85) and whatever other 4K source you're likely to want to use it with. And on the audio side, it decodes Dolby Atmos and DTS:X, and can be upgraded (via a 'net connection) to support Auro-3D if you're prepared to pay the €150 fee.

Bluetooth, Wi-Fi, AirPlay, Spotify Connect and DLNA are also on the menu, so your music collection won't get left behind either. This is home cinema at its most progressive.

Ahead of the curve

In terms of design, there's a sense of style here that you don't get from most AVR manufacturers. Available in black or silver-gold, the amp has curved front panels that flank the brushed metal faceplate. The brand's usual porthole display and surrounding blue light make an arresting visual centrepiece, too. However, this is small and strips info down to the basics; a larger, more thorough display lives under the heavy flap below, amid a bevy of buttons and auxiliary sockets. One of the eight HDMI inputs resides here, alongside a USB port, headphone jack, AV inputs and a port for the setup mic. At the rear you'll find well-spaced speaker terminals and plenty of legacy connections.

The AVR has three HDMI outputs, one of which supports ARC, while another can be used to pipe video to a second zone.

As a nine-channel amp, you can employ the Marantz to drive a 5.1.4 or 7.1.2 Dolby Atmos setup, or expand it to 7.1.4 with an external two-channel amplifier thanks to the Marantz's 11-channel processing capability.

For the amp stage, Marantz's spec sheet claims a healthy 125W per channel into an 8 ohm load (20Hz-20kHz, two channels driven, 0.05% THD). Put it in full-bore multichannel movie mode and you can expect this figure to drop, but it's still an AVR more suited to medium/large setups than budget satellite speakers.

AV INFO

PRODUCT:
9.2-channel AV receiver

POSITION:
Marantz's flagship AV receiver

PEERS:
Onkyo TX-RZ800; Denon AVR-X6200W; Pioneer SC-LX59

An onscreen assistant guides you through the setup process step-by-step, even down to connecting speaker cables. The menus aren't the most sophisticated you'll ever see, but the layout is clear and welcoming.

The logical, stylish remote is a pleasure to use, while the backlight comes in handy for when the curtains are drawn. You could use Marantz's smartphone app instead, but with a physical remote this good it seems a shame to go virtual.

Aiding setup is Audyssey's MultEQ XT32 auto room correction, using a supplied microphone to measure each speaker's output from eight positions and optimise the response for your room. It's easy to run and worked well for my system; I didn't feel the need to indulge in post-setup tweaking. On the video side, the SR7010 is ISF-certified, meaning it has a range of calibration controls for a trained engineer to play with. I'm not sure this is a feature worth having, as calibrators prefer to work at the display end.

Appetite for destruction

Onto performance and the SR7010 is gob-smackingly good. Whether you're using a standard or height-inclusive setup, it creates a huge, cohesive soundstage with masterfully-orchestrated effects.

Revisiting *Cloverfield* on Blu-ray, the Marantz makes the destruction of Manhattan sound colossal, and as the army moves in the scale of the battle is remarkable. Meaty explosions, shots firing across the room, the beast's booming roar, stomping footsteps – the SR7010 plunges you into the action brilliantly. The integration and interplay between channels is seamless and immersive, not allowing your attention to wander for a moment.

This sense of immersion is helped greatly by the SR7010's top-end subtlety and finesse, a hallmark of Marantz receivers. Small details like scuttling rats and gentle echoes add to the tension as the group creeps through the subway tunnel.

The receiver musters hefty power, but there's more to it than just muscle. Its ability to harness and control that power is really impressive. The .1 channel thumps and slams while transient effects shoot from the speakers with a sharp, snappy quality, but even at film-night levels the Marantz remains composed and easy on the ear at points where lesser machines will harden up or start to sound booming and unorganised. Rival AVRs do sound more aggressive in their presentation, but for me this doesn't make the Marantz any less appealing.

SPECIFICATIONS

DOLBY ATMOS: Yes ***DTS:X:*** Yes ***THX:*** No ***POWER OUTPUT (CLAIMED):*** 9 x 125W (8 ohms) ***HDMI:*** 8 x inputs; 3 x outputs (all v2.0a) ***AV INPUTS:*** 4 x composite video; 4 x digital audio (2 x optical; 2 x coaxial); 6 x analogue audio ***ANALOGUE MULTICHANNEL INPUT:*** Yes. 7.1-channel ***MULTICHANNEL OUTPUT:*** Yes. 13.2 ***MULTIROOM:*** Yes. Zones 2 & 3 ***VIDEO UPSCALING:*** Yes. To 2160p ***DIMENSIONS:*** 440(w) x 185(h) x 411(d)mm ***WEIGHT:*** 13.8kg

FEATURES: Built-in Wi-Fi & Bluetooth; Auro-3D upgrade available; Audyssey DSX, LFC, Dynamic EQ, Dynamic Volume & MultEQ XT32 audio calibration; Hi-res audio playback (DSD 2.8MHz, FLAC 192kHz/24-bit, ALAC 96kHz/24-bit, AIFF, WAV 192kHz/24-bit); MP3, WMA, AAC playback; ISF certified; DLNA certified; Apple AirPlay; Windows Play To; vTuner internet radio; Spotify Connect; Android/iOS app

PARTNER WITH



MARANTZ UD7007: This deck has been around since 2012 but remains the brand's best-in-breed, and is now available for around £450 having once sold for almost double. Musically minded, it supports SACD, DVD-A and 192kHz/24-bit files

Partnered with XTZ's Cinema Series speakers in a 5.1.4 setup (see *HCC* #259) and running the Atmos mix of *Mad Max: Fury Road*, the result is heavenly home cinema. The three-dimensional soundstage is presented with precision and cohesion – the sound of angry car engines and colliding metal is a real thrill as it moves overhead and around the room. In the midst of it all dialogue remains lucid and authoritative.

And Marantz's musical leanings make the SR7010 a wonderful way to enjoy tunes from any source. There's a sense of warmth and clarity in its two-channel playback that makes this a good choice for anyone who likes music as much as they do movies.

A top-drawer receiver, then. It'd be nice to see the brand go a step further and launch an 11-channel version... ■

HCC VERDICT ★★★★★

Marantz SR7010

→ £1,100 → www.marantz.co.uk

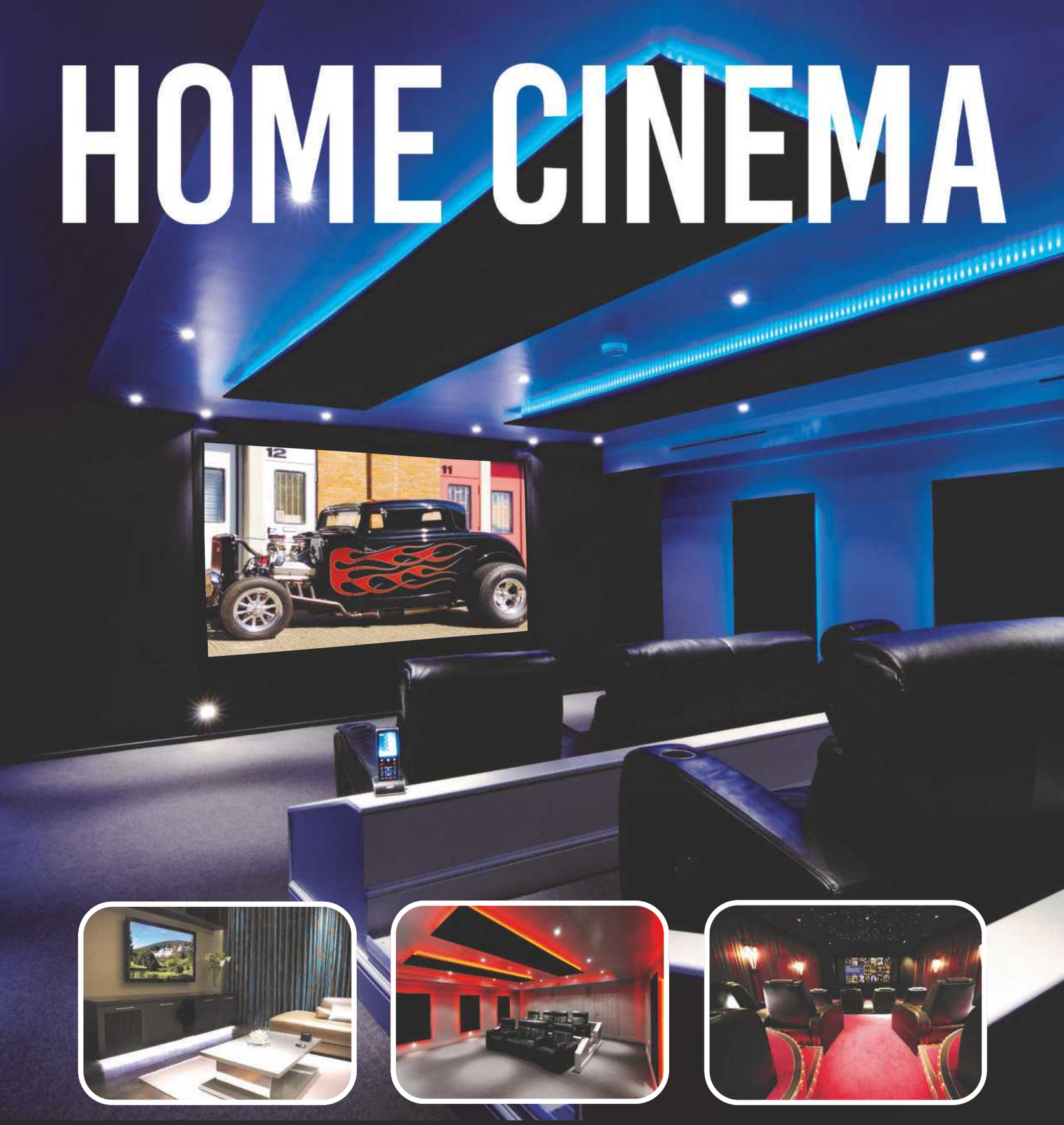
WE SAY: This top-line receiver from Marantz boasts a forward-thinking spec, wide-ranging network features and a commanding performance. Good price, too



1. The SR7010 shares the same design as Marantz's range of hi-fi, network and AV source hardware

2. 13.2-channel analogue preouts support front wide as well as quad height speaker arrays

HOME CINEMA



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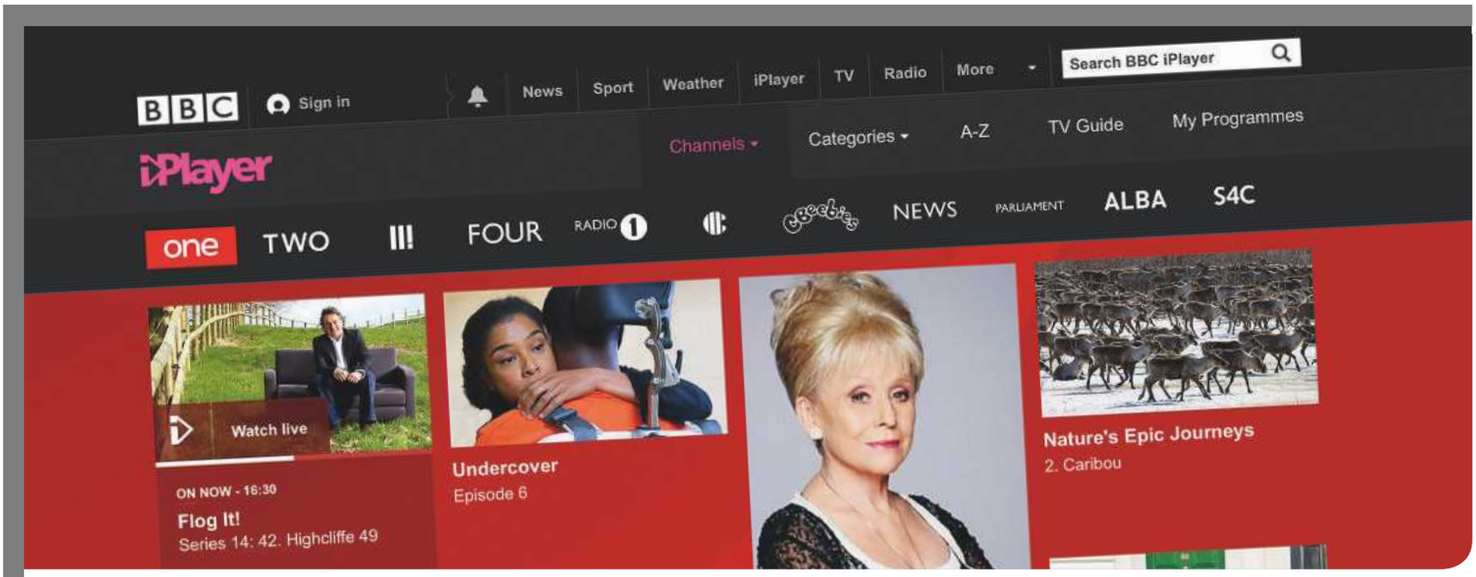
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Digital Copy

Changes to the way the BBC operates have **Mark Craven** concerned, not because he cares for tea-time telly, but because the Beeb lives a second life as an AV innovator

THE BBC IS under pressure. Come to think of it, isn't the BBC always under pressure? I'm pretty certain I could have written that sentence at any time over the past twenty years and gotten away with it. It's a hazard of its very existence – funded by our licence fees – to be constantly scrutinised. In essence, we all own the BBC, so therefore feel happy to moan about it. This time, though, it hasn't been Grumpy of Gravesend leading the attack, but Culture Secretary John Whittingdale.

In the build up to the release last month of his white paper setting out proposed changes to the BBC, rumours were rife that it would include demands to stop scheduling popular programmes in conflict with prime-time commercial fare. In other words, asking the BBC to broadcast popular shows at unpopular times. Thankfully, that never came to pass, perhaps because Whittingdale released it's not much of a leap from insisting the BBC move *Strictly Come Dancing* from its Saturday-night slot to insisting that the *News at Six* goes out at 3.50pm. Instead, the BBC must now concentrate on 'distinctive, high-quality' content, which may or may not mean watching **Z-list celebrities prance around in sequinned trousers**, depending on your point of view.

On a downward slope

Now I couldn't give a foxtrot whether *Strictly Come Dancing* remains on free-to-air TV. But I am concerned that all this is just the thin end of a big, fat, annoying wedge. Begin weakening the popularity of the BBC's programmes, or moving them to ridiculous time-slots, and the whole organisation will start to look irrelevant. And from then it's a slippery slope towards having no ad-free channel anywhere on my EPG.

And perhaps more important is the work the BBC does in other areas, away from giving Chris Evans licence to crash cars. We've often covered the technical achievements of the BBC's R&D division in this magazine, from its 3D and 4K TV trials to its surround sound radio broadcasts and noise-cancelling wizardry. The BBC may be a big, public sector company that pays large salaries, but it doubles as a hub of audio-visual invention, a practice that is enshrined into its Royal Charter.

This, in my opinion, is another reason to cherish it, and I'd hate to see a future where the BBC is no longer given the time and money to pursue these adventures because it's been beaten down and stripped of revenue. That's not to discount the work being done by its commercial rivals. But – as with all scientific endeavours – not having to balance results against potential profit is helpful. BBC iPlayer (pictured) is a perfect example of its forward-thinking nature. This practically invented the concept of catch-up TV. And you can't say for certain that someone else would have come up with the idea.

As for the value-for-money question, I'm in the 'yes' camp. The licence fee works out at about £3 a week. I reckon I get that much value from its radio stations alone, before adding in the weather reports, sports news, kids' TV shows and dramas that I manage to squeeze in between Blu-ray boxset marathons. I may get much of my home cinema enjoyment elsewhere, be it from discs, subscription VOD, BT TV or Sky, but the BBC fills in the gaps. I'm not blinkered enough to think that it can't be improved, but I'd rather it was left alone if the demand for it to be 'distinctive' proves to be the start of its downfall ■

Do you think the BBC offers value for money? Let us know: email letters@homecinemachoice.com



Mark Craven will chain himself to the railings at Broadcasting House if anyone proposes cancelling *Homes Under The Hammer*



Film Fanatic

Following an encounter with the gross-out comedy *Dirty Grandpa*, **Anton van Beek** laments the current career trajectory of one of the all-time Hollywood greats

FOR DEDICATED MOVIE buffs, there are few things sadder than witnessing one of your heroes fall from grace. And I'm not only talking about those who succumb to a downward spiral of drink, drugs and general debauchery. There are also actors whose careers have gone so far off the rails that they've crashed through the ticket barriers, and for no obvious reason other than making a series of incredibly poor choices when it comes to roles.

A prime case is Robert De Niro. Thanks to a series of incredible performances across three decades in the likes of *Mean Streets*, *The Godfather Part II*, *Taxi Driver*, *The Deer Hunter*, *Raging Bull*, *Once Upon a Time in America*, *The Untouchables*, *Midnight Run*, *Goodfellas*, *Cape Fear*, *This Boy's Life*, *Casino*, *Heat* and *Jackie Brown*, **De Niro was showered with accolades and hailed as one of the greatest actors of his era**.

But what now? Well, I recently sat down with a Blu-ray of the gross-out comedy *Dirty Grandpa*, and was treated to the sight of De Niro sat in a recliner with his trousers around his ankles, 'enjoying' pornography – until he was interrupted by his grandson (played by Zac Efron) entering the room. And that's just 10 minutes into the film. There's still another 99 minutes of this to look forward to: Oscar-winner Robert De Niro cracking endless racist and/or homophobic jokes; Golden Globe-winner Robert De Niro rapping Ice Cube's *It Was a Good Day* in a karaoke bar; L.A. Film Critics Association award-winner Robert De Niro sticking his genitalia in Efron's face; and BAFTA award-winner Robert De Niro participating in one of the most uncomfortable sex scenes ever committed to film.

If this was a one-off, then you could ignore it as nothing more than a blip. Yet the opposite is closer to the truth. The past decade has seen the odd flash of De Niro acting magic (particularly in his work with David O. Russell), but for the most part the glory days seem oh-so far away.

So when did the De Ni-rot really start to set in? Around the turn of the millennium, I reckon. From the one-two punch of the dire *Flawless* and the unwatchable *The Adventures of Rocky and Bullwinkle*, his career snowballed into *15 Minutes*, *Godsend*, *Meet the Fockers*, *Hide and Seek*, *Righteous Kill* (which also worked its career-spoiling magic on Al Pacino), *New Year's Eve*, *The Family*, *Last Vegas*, *Heist*, and more. I used to get excited about a new Bobby D film arriving. Now I just tremble.

Dirty dealings

It's easy to just think that De Niro has made the transition from an actor who chooses films based on the merits of the material to one whose only real concern is the size of the paycheck that's waiting at the end of it (how else, for instance, do you explain *Little Fockers*?). But is this fair? There's no doubt ageism at work in Hollywood, and 32-year-old De Niro is going to get a lot more interesting and demanding offers than his 72-year-old counterpart; his old chum Martin Scorsese has basically traded him in for a younger model (Leonardo DiCaprio). Other actors of his generation – James Caan, Harvey Keitel, Pacino – seem similarly affected. There are only so many elder statesman roles going, and Michael Caine is currently grabbing most of them.

Yet none of this can excuse *Dirty Grandpa*. This is a movie so crass, crude and criminally unfunny that it makes you wish everyone connected to it would just quit the business.

And yes, Mr. De Niro, I'm talking to you ■

Which actors have made the worst career choices? Let us know: email letters@homecinemachoice.com

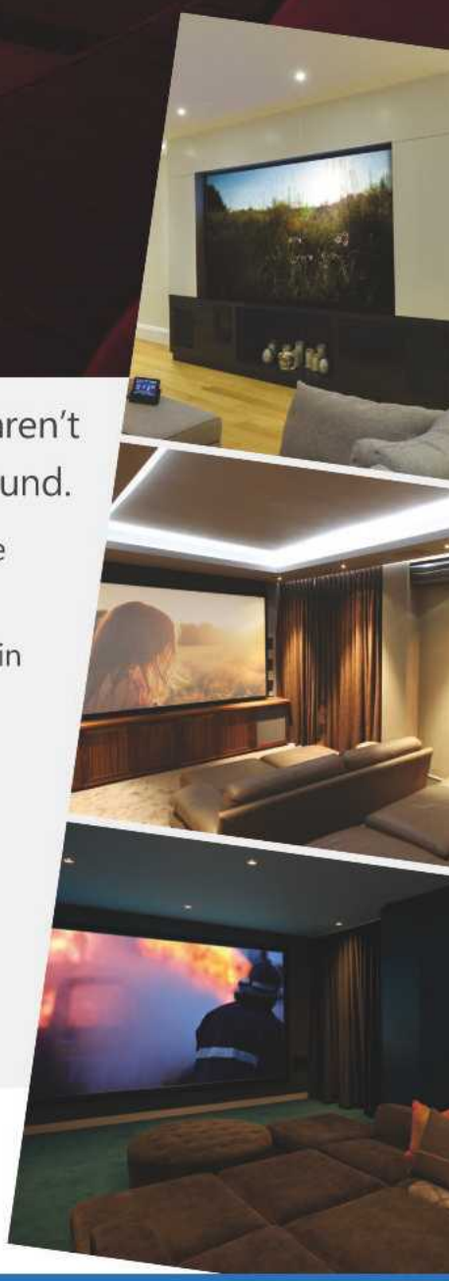


Anton van Beek is considering getting a Mohican haircut to remind him of De Niro's golden period. Or learning to speak Sicilian

"truly spectacular"

says the homeowner of this
4K home cinema with Dolby Atmos 7.2.4

CEDIA AWARDS 2016 This home cinema is shortlisted for the 'Best Home Cinema over £100,000' award



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In The Mix

During these early days of HDR video, **Jon Thompson** is getting bothered by bits, and believes that the HDR 10 standard doesn't have the scope to achieve its image quality aims

IT'S LOUDER SO it must be so much better. That, I'm beginning to think, is an idea that applies to HDR. The format is brighter by design, but is it any good or is it just brighter?

Blu-ray is an 8-bit video format giving 230 usable steps of brightness in SDR (Standard Dynamic Range). Black-to-white is 16-235, with 5 per cent allotted for what is known as super white or highlights, so white is 246. (Some people set it as 242, which is actually wrong and leads to clipping). Professional video has always been 10 bits by design. SDR black starts at code value 64, and white is code value 940, with super white at 984. This gives us 920 steps, exactly four times more range than 8-bit video. Still with me? Good.

Kodak, when it devised the method of transferring film negative into the digital world, used 10 bits as standard. It applied a log curve, in this case, Cineon Log. This is where is gets a bit muddy. Film was classed as a higher dynamic range capture medium to produce a standard viewing range, or SDR. Now, if we are saying we need 10-bit Log to produce a standard viewing range, then how can you use 10 bits to produce a high dynamic range image from the same-size source? The answer – or compromise – is it uses Perceptual Signal Coding for more efficient usage of bit codes (PQ Coding). **Or, in English, it weights the bits to be a more effective use of the space available**; it applies more bits to the real meat of the picture.

In my opinion, the HDR 10 format that's currently featuring on Ultra HD Blu-rays doesn't have enough bits to truly achieve what it's trying to do. Despite using PQ coding, the dynamic range is too big, and pushes the PQ coding beyond its comfort zone. A system that uses 12 bits (such as Dolby Vision) has four times the range of 10 bits or 16 times the range of eight bits. At this point, PQ coding has the bandwidth to work efficiently.

Now the next issue is: what are you encoding? In the 8-bit system, you allow 5 per cent for highlights. This is where confusion seems to have entered the system of HDR. None of the current display technologies actually meet the standard set out for HDR, so compromise has been made to make this work on current generations of display. The actual meat of the picture has less real bits assigned to it than an SDR 8-bit source. Which to me, in some situations, makes the picture look a bit cartoonish. I can see contouring and banding in the image whereas the 8-bit version looks great and has none of those artefacts. Yet because it's brighter they are not as easy to spot, which is a way of fooling the eye.

An example of this is *The Revenant*. I was lucky enough to see it at a screening with Emmanuel Lubezki (Oscar-winning cinematographer) and Alejandro González Iñárritu, the director, so I hope I have a very good idea of what it's meant to look like. And, ignoring the resolution uptick, I actually prefer the 8-bit Blu-ray to the 10-bit HDR 10 iteration. This looks close to the 12-bit digital cinema version. As for the 4K uncompressed master (the film was shot on a mix of formats, most higher than 4K), the Dolby Vision cinema version makes a very good fist of it.

UHD HDR seemed like a nirvana of home cinema solutions, but what it has done is open a Pandora's box of issues that'll keep it interesting/annoying for the next few years depending on your point of view. For brands desperate to sell TVs since the 3D market collapsed, HDR is a natural progression. The only issue is how you 'do' HDR. So far the implementation in the consumer space is a little crude ■

Are you an HDR early adopter? What's your verdict on the format? Let us know: email letters@homecinemachoice.com



When he's not in his screening room, **Jon Thompson** tweets about Hollywood gossip, movie-making and digital mastering at @johnnyfocal

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How to...

Be an AV media mogul

What's needed to get your home cinema up to the task of handling all your multimedia? **Martin Pipe** looks at the hardware and software required to bring movie, music and photo streaming together

IN THE BEGINNING, you watched TV as it was being aired, tied to broadcasters' whims. Then came the video revolution – the chance to watch what you wanted, when you wanted – and the birth of mainstream home cinema.

Until recently, AV-Holics relied on physical media, and enthusiasts have built up large collections that take up a lot of space. Then there's the hassle of tracking down the specific movie or TV show you want to watch, while if you're a music fan, there are all those records, CDs and digital downloads to accommodate and sort.

But things are changing. Faster broadband connections mean that more of us can view movies and TV on-demand via streaming services. Music fans are served by all-you-can-eat operations like Spotify. And instead of using PVRs as we did a decade ago, we catch up with our favourite programmes on smart TVs and portable devices with BBC iPlayer, 4oD and platforms of their ilk. There's also the millions of clips on YouTube, countless internet radio stations vying for your attention, music and video downloads.... It all adds up to a lot of choice. But is your home cinema setup ready to embrace it?



1

1. **Modern smart TVs such as models from Panasonic (pictured) work as DLNA players**

Net, set, go!

It's all very well having a smart TV or Blu-ray player in your home cinema room, but a network connection is essential if you want to explore this online cornucopia. Such connectivity also opens up the possibility of a centralised 'media tank' storage system, accessible to all networked devices around the home, on which you can house your movies, TV shows, home videos, music and photos.

So you want your home cinema online in the best way possible. A broadband internet service provider (ISP) will supply you with a router (usually combined with the modem that, in basic terms, connects your network to theirs). A router manages connections and 'routes' data to where it needs to go, enables your broadband connection to be simultaneously shared by multiple users, and provides basic security in the form of a firewall. Most, if not all, also provide a Wi-Fi access point. Aftermarket routers usually provide better performance (especially in Wi-Fi terms) and more features, including coverage of the 5GHz Wi-Fi band, which is less crowded than the longer-established 2.4GHz one. Unfortunately, current 5GHz support in home AV gear is relatively poor.

If your home cinema equipment is physically-located near the router, then strong and reliable Wi-Fi communication should be possible. Always use a secure encrypted connection to prevent unauthorised users within Wi-Fi range from stealing your connectivity. The most common default security protocol is known as WPA (Wi-Fi Protected Access).

If everything is in the same room, though, an alternative is to connect your networked equipment to the router via hardwired Ethernet. The average bundled router has four ports – enough for an AVR, smart TV, Blu-ray player and networked storage. A wired connection will give the best performance and, to all intents and purposes, is totally secure. Wi-Fi capacity is also freed up for other users.

If you live in a large house and your router is nowhere near your home cinema room, or your Wi-Fi coverage is weak and erratic, then you're faced with a few options. Firstly, you could run Ethernet from your router to where it's

needed, but that's a lot of hassle – chasing cables, prising up floorboards and so on. This is best done if you're in the process of renovating your home and the floorboards are already up. Some firms sell kits containing multi-core cable, plugs and crimping tools so you can make up custom lengths. If you're wiring afresh, choose the latest network cabling (Cat6) that supports Ethernet speeds of up to 10Gbps – even if none of your current gear does. That way, you're future-proofed.

Powerline networking is a practical, alternative solution. This clever tech uses the mains wiring of your home to send data at high speed. Kits usually sell for less than £100, sold by a range of firms including Devolo, TP-Link and Netgear, and are easy to set up. A transmitter plugs into a wall socket near the router, linked by an Ethernet cable. A receiver is plugged into a mains socket in the remote location. A one-time pairing process makes the encrypted connection. Some receivers have Wi-Fi access points, which can be used to provide fill-in coverage where your existing router's range is poorest; all have at least one Ethernet port for wired network connections. If you have several pieces of networkable equipment, look for a receiver with multiple ports or buy an inexpensive 'hub', a device that allows the port (and the total available data transfer rate) to be shared. You can buy additional receivers (they adhere to a basic standard, known as Homeplug) and use them with a single transmitter, although they would share the total capacity (1Gbps for modern systems). I've had no trouble streaming HD video or hi-res music across powerline networks.

Your serve...

Okay. Everything's networked. Now it's time to address all of the movies and music that are stacked on shelves or packed in boxes, stuff you may have bought and then forgotten about. The aim is to get instant access to everything you've got, on any device in your home, and thanks to network attached storage (NAS), you can.

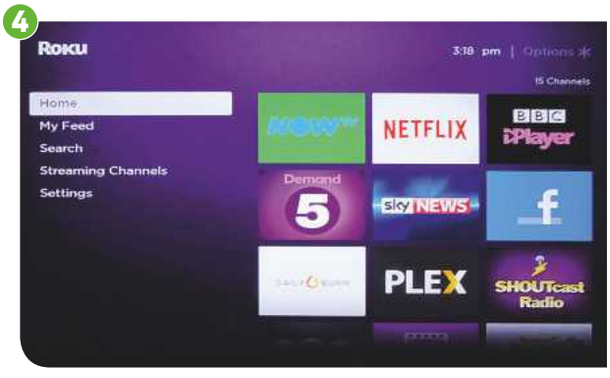
A NAS is basically a networked hard drive (plugged into a spare Ethernet port on your router), onto which your multimedia files are copied. Given the work that may be involved in getting them there, reliability is a must. Most NAS boxes hold several hard drives over which your data is spanned, so if one fails, your data can be rescued. We've tested a number of different NAS products, from firms like WD, QNAP and Synology. They needn't be expensive, especially if you buy empty ones without hard drives that you buy separately and install yourself.

A NAS can run a program known as a media server. If this isn't installed out of the box, you can usually add it as a free app via the web browser of a computer on the same network. The important thing is that the media server complies with a standard called DLNA (Digital Living Network Alliance), sometimes also referred to as uPnP (universal Plug and Play). This will be able to deal with the variety of DLNA-compliant players (or clients) that will play your content. Among these are smart TVs, media streamers (Chromecast, Amazon Fire, Roku, etc – all versatile and very user-friendly devices that will make any TV smart), smartphones, tablets, AV receivers, Blu-ray players and computers.

For die-hard multimedia fans, dedicated networked players (among them models from A.C. Ryan, Dune and Popcorn Hour) are the best bet, as these can cope with a wide range of formats. They aren't reliant on DLNA, either, and can pull media directly from the folders of a networked storage device or computer set up for file sharing. Such flexibility comes into its own with unusual formats that a DLNA server may struggle to recognise. There's a price to pay, though; these players tend to have no-frills user interfaces. Don't expect Roku-like slickness here...







2. A NAS device connects to your router, and stores media files for playback elsewhere

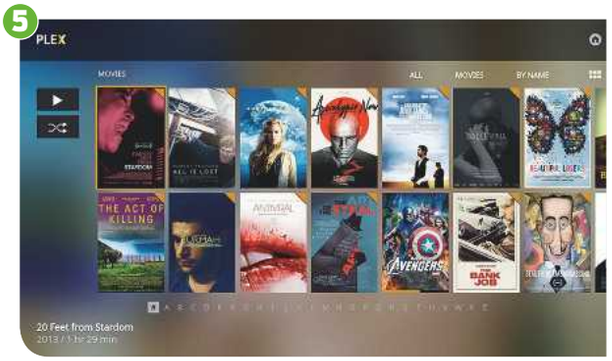
3. An aftermarket router may offer better Wi-Fi coverage, in addition to other networking tricks

4. Roku players (including the HDMI 'stick') come with Plex functionality pre-loaded

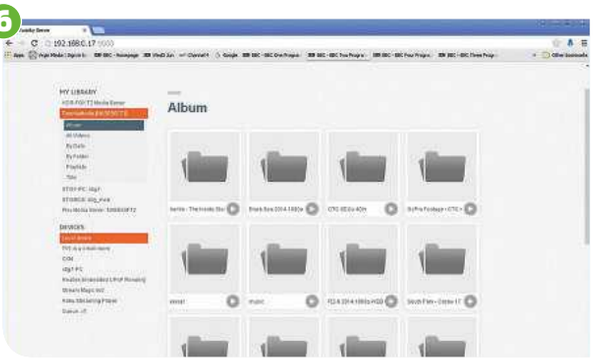
Plex-ing your multimedia muscles

There's also a fair amount of choice when it comes to multimedia servers. On the QNAP HS-251 that I'm currently using, you have the option of the pre-installed QNAP Media Server, TwonkyNAS or Plex. All are free and work well, but the latter is particularly interesting.

Plex supports DLNA and will thus work with compatible players. But it also supports additional metadata that can only be understood by Plex clients built into some devices >



5



6

(such as Roku players) or can be installed as apps. This extra metadata includes album/movie artwork and summary information. The result is a superb user interface not dissimilar to that of pricier high-end systems like Kaleidescape. With a standard DLNA client, on the other hand, you simply sift through lists of movies, music and photos until you find what you're after. You can, depending on what metadata is available and supported by your DLNA server, hone in on a movie via categories such as name, director, year of release, rating, actor or genre. Not as cool as Plex, but certainly preferable to sifting through discs.

Other Plex features include private media sharing, trailers, streaming your content from cloud services and online channels.

For the easiest home cinema streaming experience, a NAS device is the preferred option, but there are alternatives. Got an old PC gathering dust in the attic? You might be able to repurpose it as a network storage device, via free software such as the open-source Linux-based FreeNAS. This is a handy option if you're short of cash or want to experiment before committing to a purchase.

That said, a bare-bones NAS – or one that uses USB memory devices for storage – can be yours for £50. More expensive models have greater computing power and are able to transcode media files into forms that can be understood by specific media players.

Digital dilemma

The final consideration, now you've got your AV hardware sorted, is content. What do you want to be able to play?

Firstly, home movies, digital photos and downloaded music are easily transferable to a NAS, and sorted by the DLNA server software that typically organises your content into the Music, Movies and Photo categories provided by network client software. But for home cinema fans the big appeal concerns DVDs, Blu-rays and audio CDs. And here we're getting into a grey area – that of ripping.

Audio CDs are technically no problem, as there's no encryption. Apple's iTunes and Windows Media Player will happily help you digitise your CD collection, regardless of that fact that recent copyright law frowns upon such activity. Music buffs might want to check out a free Windows program called Exact Audio Copy (EAC), which will extract tracks from your CDs and features error correction to ensure best-quality results. These can be stored in their raw (16-bit PCM .WAV) state, or compressed into MP3 files that take up less space. Do the latter, though, and the compression can savage the sound. Best then, to go for FLAC (Full Lossless Audio Codec). A FLAC file takes up half the space of a raw PCM file, but there's no deterioration of sound quality.

After your music has been ripped and copied to the NAS, your source CDs can be packed away. And with appropriate hardware, even LaserDiscs and videotapes can be transferred onto unencrypted DVD-Rs that can easily be copied to a NAS.

With commercial DVDs and Blu-rays you'll have to break the disc's encryption if you want to end up with a file that can be stored on a NAS and streamed to your devices. Strictly speaking, this is illegal, but many AV enthusiasts choose to ignore that, as they want to enjoy content already paid for to view in a manner that's more convenient than trawling their disc shelf.

Software capable of ripping DVDs and Blu-rays from a PC/media player's drive exists – what you choose to do is a matter of personal conscience. Depending on your ripper's settings, you'll have the menus, special features and multiple soundtracks (including surround) of the original disc. If your multimedia device is connected to your AV gear via HDMI, you can get multichannel audio too.

There are two further issues to be aware of when it comes to archiving movies – time and HDD space. While iTunes will make short work of a CD, even the zippiest Blu-ray ripper will often take over an hour to do the same with a movie – turning your extensive library digital is a long job. Secondly, the file sizes are much bigger. Opt to rip an ISO file – essentially an exact replica of what's on the Blu-ray – and you could be looking at nearly 30GB per file, which will soon have you investing in more HDD drives for your NAS. Even if you choose to just port the main feature, you'll still find space an issue.



7

Get connected

With a little planning, effort and organisation, your home cinema life can be greatly enhanced by home networking. You need not spend a fortune, either, and that NAS can also be used to store back-ups of your precious memories and documents. So what's not to like? ■

TOP TIP

PLAY IT SAFE: Mitigate the dilemma of hard drive failure by using two HDDs in a RAID configuration – one mirroring the content of the other as a backup if the primary drive calls it quits

5. Plex's media server software is a favourite among tech enthusiasts, courtesy of its graphic UI and format support

6. Rival media server Twonky employs a more simplified user interface

7. Start ripping all your DVDs and Blu-rays and you may need to step up to a larger-capacity NAS such as this 8-bay model from QNAP

DO IT!

COST: For a 1TB NAS, budget around £60-£100

TIME: How long is a piece of string? Setting up a NAS and connecting devices won't take long, but importing/copying files may do, depending on the size of your collection



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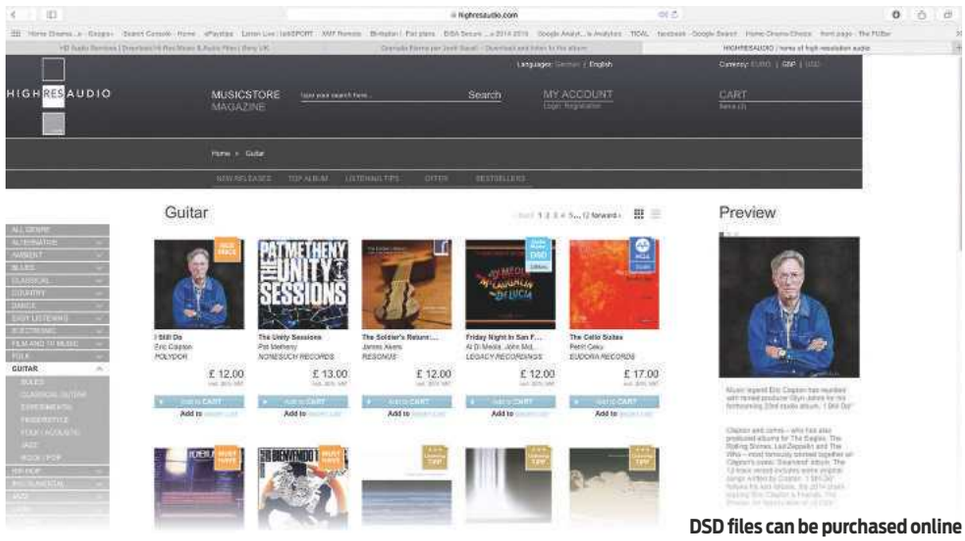
Got an axe to grind? Need to comment on current technology? Want to share your knowledge with our readers? **Team HCC** is here to help

Do you rip SACDs?

I read with interest your review of the Panasonic UHD Player. I am very excited about the upcoming UHD Blu-ray titles, but what caught my interest in the piece was the reviewer saying he had some DSD files. Is it possible to rip an SACD to an HDD, keeping the 5.1 intact?

I have quite a few SACD titles that I would love to store on an external hard disk drive and play them through my Oppo Blu-ray player. I would be grateful for any advice on how to do this and what equipment I would need.

Finally, can anyone tell me if the classic ghost story *The Changeling*, starring George C Scott, is available anywhere on Blu-ray? I know one country has this title but this has poor picture quality. I get fed up with the same old titles being re-released again and again. Where are *The Abyss* and *True Lies*?
Paul, Plymouth



DSD files can be purchased online

Steve May replies: SACD has advanced copy protection that makes it very difficult to rip the DSD files for playback on external gear. As far as I'm aware, the only option is to get an early PlayStation 3 (back when Sony included SACD playback on the console) to complete the task. The website www.ps3sacd.com has a user guide explaining what you need to do. Read it, though, and you might decide it simply isn't worth the faff.

So where do my DSD files come from? Digital downloads. There's a growing market of labels offering DSD-flavoured music, such as Native DSD (www.nativedsd.com), High Res Audio (www.highresaudio.com) and 2L (www.2l.no), all of which are perfectly legal. Just don't expect downloads to come cheap.

Anton van Beek replies: Haven't you asked about *The Changeling* before, Paul? Anyway, this film remains unavailable on BD, apart from a release in Japan. I've not seen it, but those who have imported it weren't impressed with the image quality. Still no word on a UK or

OLED for under a grand?

I have been very, very impressed with OLED TV demos, in the same way I was knocked out by those old Pioneer Kuro plasmas.

I am planning on upgrading my four-year-old 50in LG plasma. Can you tell me if OLED TVs will be under £900 come this Christmas? It doesn't have to be 4K, Full HD will do as I was blown away by BDs played through an OLED.
Dave

Steve May replies: An OLED TV for less than a grand by the end of the year? I'd've said 'not a chance,' but you can now buy a 55in LG Full HD OLED – the 55EG910V (pictured) – for around £1,400, so perhaps the pre-Christmas sales will be kind to you. It's a curved screen, though, so may be not what you want, and isn't one of the new 2016 models with Dolby Vision support. And it may have sold out by then.



US release. As for *The Abyss* and *True Lies*, there's no news on these flicks either. See p25 for more.

Sky Q suits me

Having read a couple of negative letters in *HCC* #259 in relation to Sky Q, I thought I would redress the balance with my positive experience with the system.

As a Sky broadband customer I was offered an upgrade as soon as it became available and as the extra expense to me was only around £15 more than I was currently paying, I went for the Silver package.

I am impressed with the picture quality, and being a user of Apple's retina screen products it does take something to impress me on the visuals side. Also the flexibility of being able to carry on watching a programme either on an iPad, or on a TV in another room, via the Sky Mini box, is an added bonus. The ease of use can perhaps be best illustrated by how quickly my 85-year-old father picked up most of its functions.

I am inclined to agree with you Mark, that most people are using catchup services and the need for big storage capabilities, while handy to have, is by no means essential these days – providing of course you have access to the internet.

John Nelson

Mark Craven replies: Thanks for your input John. Our review of Sky Q is in this issue (written by my colleague Steve May), but I've now had first-hand experience of the system and, like him and yourself, am impressed. The wireless multiroom functionality is very useful, and I immediately feel the new UI makes the Sky+HD interface seem outdated. That said, I'm not the world's biggest fan of the trackpad remote and – like Steve – have experienced a couple of instances where the Silver box needs re-pairing with a Mini client, despite a robust Wi-Fi signal throughout the house. Sky's own community forums show that others have experienced this, and it appears adjusting the Standby mode might be in order. Or perhaps a firmware update will iron out the problem.

Why get 4K with 8K on the way?

I have been buying your magazine since the 1990s, and really enjoy reading about all the new technology that's coming out in the future.

Now, why is it that 4K Ultra HD is just hitting the market, but there is now 8K UHD coming soon? Consumers are all buying 4K TVs and UHD Blu-rays for nothing really, because 8K is coming out which is 16x the resolution of 1080p TVs. This means there will be new TVs for 8K, new Blu-rays, etc.

But I also hear there is a 16K format – and 32K – that will come out sometime in the future. There seems to be no end to how far companies will proceed in new picture technology and us – the poor consumers – have to pay the price and upgrade all the time.

Will it ever end? Will the TV manufacturers reach a point where they can go no further?

Paul Barkley

Mark Craven replies: Companies will never stop innovating – this is the reason why we've moved on from analogue tape, through LaserDisc and DVD, to Blu-ray and digital downloads. It's also the reason why you can carry a tiny box in your pocket that houses all your music collection, or make a real-time video call to someone on the other side of the planet. Technology is great!

But, to get back to your point about 8K and beyond. Personally, I don't think 8K is anything that anyone should be overly concerned about right now. Yes, the technology is being worked on – and as we report on p28, flatscreens will launch in some parts of the world this year – but content creators are very much involved in a '4K space' right now, and only just beginning to realise its potential Therefore, it will be some years before 8K broadcasts and home media become a real option (and by that I mean regular, varied content), by which time an upgrade on a 4K TV won't seem like such a drag.

I don't expect there to be 8K Blu-ray for a decade, if at all. I may be wrong, though. >

Star Letter...

Will my AV amp work with Dolby Vision?



Okay, here we go. Are we due another format war – HDR v Dolby Vision – and what does this mean again for us hard-paying consumers?

I have just purchased the award-winning Denon AVR-X2200W amp. This, I thought, was as futureproof as it gets, or is it?

In addition to handling 4K Ultra HD 3,840 x 2,160 resolution, the AVR-X2200W features HDR and Wide Color Gamut compatibility, key components of the BT.2020 4K Ultra HD video specification.

So can you please help me, where does Dolby Vision come into this? Dolby seems to be getting more and more studios on board, and Dolby Vision – according to the experts – is an improvement on the normal HDR 10, currently being sold.

I am hearing any 4K TV without Dolby Vision will not be able to support it, as it's hardware, and cannot be added via a software upgrade. Worse case then if Dolby 'wins', all these sold 4K TVs would not be able to display it. At the moment the new 4K Blu-ray players by Samsung and Panasonic also do not support Dolby vision.

As for my Denon, how would this work, will it allow Dolby Vision to pass through it, or will now I need to upgrade?

I see the new LG OLED screens are now supporting both HDR 10 and Dolby Vision, so it seems they are futureproofing in the right way. And that Dolby Vision is a real thing to take notice of.

Also Netflix is showing movies in Dolby Vision, so is this just the start?

I have contacted my dealer about the Denon, and they are unsure what this all means and they are still waiting for answers from the Denon rep.

Mark Golding

Jon Thompson replies: Dolby Vision remains an unknown quantity at present – it has more availability in the US than the UK, and currently isn't featured on any UHD Blu-rays. But don't bet against it being adopted for disc by some studios (as it is an optional part of the UHD BD specification).

You've bought a new AVR, but haven't said if you have an HDR TV or UHD deck, so here's a quick clear-up of the facts. As you say, any TV that doesn't support Dolby Vision 'out-of-the-box' cannot be firmware updated. Nor can the two players (from Panasonic and Samsung). But let's assume you get an LG OLED that supports Dolby Vision, plus a future Dolby Vision deck. Will your amp work in between? You'd think it would as it supports HDMI 2.0a/HDCP 2.2, but it may be that Dolby's 12-bit signal requires supporting hardware all through the chain. Of course, a future Dolby Vision deck could come with twin HDMI outputs enabling you to skirt this issue.

We asked Dolby (and Denon) for their input but neither came back with comment before we went to press. We hope to have more info soon!

Star letter-writer Mark grabs Alejandro G. Iñárritu's survival thriller *The Revenant* on Blu-ray. One of the year's most talked about films, this visually-stunning cinematic masterpiece stars Leonardo DiCaprio as a man left for dead who embarks on an epic quest of revenge. *The Revenant* is now available to own on Digital HD, DVD, BD and Ultra HD Blu-ray, courtesy of Twentieth Century Fox Home Entertainment.

And then there's 16K/32K and anything else. Digital camera technology will no doubt continue to develop, with such formats possible to capture. But at a consumer level, the screen size required to view such an image with any noticeable benefit will be impractical, and that's before you get into a discussion of how to deliver such content to the home.

I'd therefore have to disagree when you say that people are buying 4K TVs/Blu-rays for nothing. Rather, they're buying the best technology that is available right now, enjoying it before something better comes along. By all means choose to wait for 8K, but it'll be a while coming.



Monitor Audio's Bronze AV pack uses dipole surrounds

Will speakers damage my TV?

Hi. I've been purchasing *HCC* now for a while, looking at what's available. I'm just in the process of choosing an AV receiver and speaker package after purchasing a new LG OLED curved screen TV.

I've noticed that in one of the speaker packages in your gear guide that I would like to hear demonstrated, that the speakers are not magnetically shielded. Namely the Monitor Audio Bronze B5 AV, nor an alternative package, the DALI Zensor 5.1.

I've asked my hi-fi store why that is, since the speakers would be next to my TV. They say not to worry.

My concern would be, what if any non-shielded speaker used affected my TV, which then would obviously not be covered on my five-year guarantee?
Tony Fitzgerald

Richard Stevenson replies: The issue of magnetically shielded speakers was important during the days of CRT TVs, where the internal hardware of such sets could be affected by powerful speaker magnets (because they themselves employed magnetic forces to steer electron beams) and lead to image distortion. Yet your dealer is right: it's not an issue with plasma, LCD and OLED tech, due to the different ways these screens operate ■

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Write to HCC, AV Tech Media Ltd, Enterprise House, Enterprise Way, Edenbridge, Kent, TN8 6HF, or email us at **letters@homecinemachoice.com**
Please note: we cannot guarantee to print/answer all the letters we receive. Sorry.

WIN! Great Blu-rays up for grabs...

Just email your answer to Competitions@homecinemachoice.com to be in with a chance to win



The Forest

Natalie Dormer stars in this nail-biting horror about a young woman searching for her twin in Japan. *The Forest* is available to own on Blu-ray, DVD and digital download from June 20, courtesy of Icon Home Entertainment, and we've got five Blu-rays up for grabs.

Question:
Natalie Dormer played which of Henry VIII's wives in TV's *The Tudors*?

Answer:
A) Catherine of Aragon **B)** Anne Boleyn
C) Anne of Cleves

Email your answer with '*The Forest*' as the subject heading – and don't forget to include your postal address!



Goosebumps 3D

The worldwide publishing phenomenon comes to the bigscreen as Jack Black takes on an army of monsters in *Goosebumps*. This scarily good film is available now on Digital HD, DVD, Blu-ray and 3D Blu-ray, courtesy of Sony Pictures Home Entertainment. And we've got five 3D Blu-rays to be won.

Question:
Which of the following authors created and wrote the *Goosebumps* novels?

Answer:
A) A. A. Milne **B)** H. P. Lovecraft
C) R. L. Stine

Email your answer with '*Goosebumps*' as the subject heading – and don't forget to include your postal address!



Pride & Prejudice & Zombies

Jane Austin's classic novel gets a makeover in this epic action-horror mashup. *Pride & Prejudice & Zombies* is available on VOD and download from June 20, and DVD and Blu-ray on June 27 via Lionsgate Home Entertainment – and we've got five Blu-rays to dish out!

Question:
Jane Austin's novel *Pride & Prejudice* was first published in which century?

Answer:
A) 18th Century **B)** 19th Century
C) 20th Century

Email your answer with '*Pride & Prejudice & Zombies*' as the subject heading – and don't forget to include your postal address!

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When HCC reader **Will** bought his house he knew the basement space would be perfect for a cinema room. Here he guides us through his kit rack and favourite movies, and reveals why his next plan is to automate everything and ditch his collection of remote controls



This dual-display cinema uses both an Epson projector (with 100in screen) and a 70in Sharp TV



Welcome to the AV-Holic Hall of Fame! Introduce yourself...

Hi, I'm Will. I'm 50 years old, I live in Newark, Ohio, and work as an Operations Manager.

How long have you been into home cinema?

Off and on, I have been into home cinema for more than 20 years. My first setup consisted of an old Technics receiver, VHS player, and a very cheap set of Pioneer bookshelf speakers. Back then I thought it was state-of-the-art.

What do you love about having a dedicated cinema room?

The pure joy of having a great-sounding system and a room style that matches my personality.

I have always been a movie buff and being able to watch movies in a comfy recliner, drinking an adult beverage, is much better than going out to a film theatre. It's great for family time, too.



What kit do you have in your system?

I have a 70in Sharp Aquos Full HD TV and an Epson 3D home cinema projector, used with a 100in motorised screen hidden by a pelmet. My AVR is a Denon AVR-X3200W (Dolby Atmos-enabled and DTS:X-ready) running a 5.1.2 configuration. Speakers are Klipsch Reference with two Polk Audio in-ceiling speakers for the height layer. A Sony BDP-S7200 Blu-ray player, Xbox One, third-gen Apple TV and a Quantum Byte media PC running Kodi and Plex are my sources. There's also a Panamax power conditioner in my kit rack.

How would you rate the setup in performance terms?

On a scale of 1-10, I would rate it at 8.5. In hindsight, I wish I'd bought the Denon flagship receiver, so I could have had additional Atmos speakers.

I have since added a pair of bass shakers under the couch and it definitely adds another dimension to movie-watching. Overall, I'm pretty pleased with my cinema.

How easy was it to install the Polk in-ceiling speakers?

I had to call in the professionals. My cinema/media room is located in the basement of my house (the man cave). It was a space that was under utilized, so I converted it into a cinema room. I went through several iterations before landing on my current setup.

> 'There's nothing like watching a movie with lots of LFE and feeling thunderous bass travel through your body'

When I bought the house, the basement was already finished so I had to do a retro-fit. I was worried the installer was going to make Swiss cheese out of my ceiling to run the speaker wiring, yet he was very creative. He piggy-backed a coaxial lead that ran to the TV without having to put any holes in the ceiling except to install the Polks. This also included a 50ft run of HDMI cable for the projector. I was impressed!

What's your verdict on Dolby Atmos/DTS:X?

It took a bit of tweaking of my receiver, but I love Dolby Atmos. The way sound travels around the room really is immersive. Denon hasn't released the DTS:X update for my receiver so I have no experience with it, but waiting patiently.

Roughly how much have you spent on the room?

All in, including acoustic treatment, close to $10,000 (I hope my wife doesn't read this!). I did a lot of research before buying products, so this allowed me to buy quality components at a reasonable price. My local electronics store knows me on a first-name basis.

How often do you use the PJ instead of the Sharp TV?

I use the projector 70 per cent of the time, usually for movie and TV watching. I go with the Sharp when I play my Xbox One, watch Apple TV or use the media PC.

What's your favourite bit of kit?

My bass shakers, hands down. There's nothing like watching a movie with lots of explosions and LFE and feeling that thunderous bass travelling through your body. I'm not sure I can watch a movie any other way. They are also great for gaming – *Call of Duty* is awesome with the bass shakers in play.



The LCR and surround channels use Klipsch enclosures

What's next on your kit list?

I'm pretty satisfied with my equipment, so the next step is automation. I want to be able to control all components, the lighting and the screen, with one remote. Right now, I'm using >



Two ceiling-fitted Polk Audio speakers provide 3D audio immersion



Will has added acoustic treatments, including diffusion panels and bass traps, to improve the system's sound performance

four remotes and it's a real inconvenience. I want to be able to dim the lights, drop the screen and turn on all the gear with a single button or command!

Tell us about the acoustic treatments in the room...

I did a lot of research on acoustics. I had a slight echo in the room, so I started using wall panels. I later added diffusion and bass traps based on recommendations from my research. As a result, the dialogue is clearer and the bass is a lot tighter and less muddled. It was well worth the investment. I may add some ceiling diffusion down the road.

What do friends and family think of the cinema room?

Let's just say, it's the place to be to watch *The Walking Dead*. I don't tell people who experience it for the first time that there are bass shakers in the couch. When the bass hits, the look on their faces is priceless!

What are your favourite films?

The Matrix Trilogy and anything *Star Wars*. My new favourite is ...*The Force Awakens*.

What discs do you use to show off the system?

Most of my friends and family have no clue what Dolby Atmos is, so I play the Atmos demo disc to allow them to experience the immersiveness of the technology. When I really want to show off, *John Wick* and *Transformers: Age of Extinction* are my go-to discs. Atmos really stands out in those films. Then there's *Flight of the Phoenix* for the bass



shaker effect – the low frequencies are insane in this movie.

Lastly, any plans for 4K?

Yes! I plan to make the leap sometime next year, but only with the wife's blessing... ■

Share your system in the mag!

If you want to be in *HCC*, you'll need to send us some hi-res images of your cinema room. Here are a few tips for great-looking pictures:

1. Go big. Set your camera to take images at the largest possible size, and at the highest resolution. Don't worry about cropping or resizing – we will make them print-ready.
2. Get in focus. Make sure your photos are as sharp and clear as possible. If you have one, use a tripod, or place your camera on a flat, steady surface and take pictures on a delay. The sharper they are, the bigger we can print them.
3. Let some light in. While we tend to watch movies in the dark, our cinema systems look their best when they are lit. If you can shoot with natural daylight, do so. If your room doesn't get a lot of light (a garage conversion, for instance) then switch on whatever lights are fitted. Avoid using flash wherever possible.
4. Be thorough. Send photos of as much of the room as possible. Images of both the front and back of the room, the kit rack, speakers, seating, disc shelf, movie poster art... The more the merrier.



5. Don't be shy. Send a picture of yourself!
6. Show us more. Got pictures of your room before it was a cinema? Or snaps of work being done? We love to see these, too.

Email your selection of images to letters@homecinemachoice.com with the subject heading 'AV-Holic'. Provide us with some information about your setup – including a full kit list – and we'll then be in touch.

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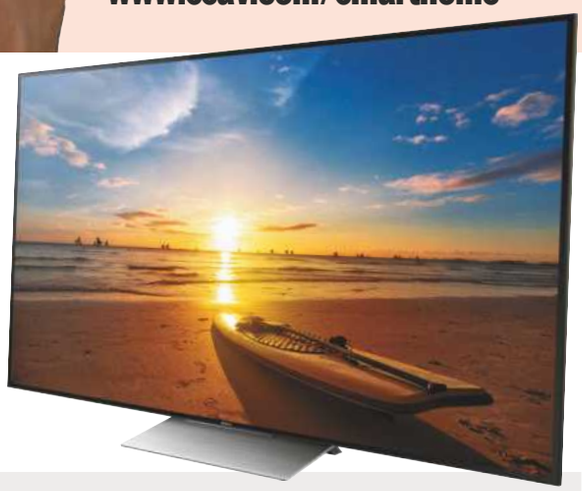
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PLAYBACK

➜**SOFTWARE HIGHLIGHTS** **THE HATEFUL EIGHT** Quentin Tarantino's epic 70mm Western makes its hi-def debut **TRIPLE 9** A pulse-pounding tale of cops and robbers **GOOSEBUMPS** Jack Black does the monster mash **IN THE HEART OF THE SEA** Ron Howard has a whale of a time with 3D **KILLER DAMES** Gothic shockers remastered for BD **& MORE!**



Heart of darkness

The Revenant ➜ Twentieth Century Fox ➜ Ultra HD Blu-ray

Does Alejandro G Iñárritu's award-winning survival thriller have what it takes to become the first must-own Ultra HD Blu-ray release? Turn to page p98 for our review of this eagerly-awaited 4K platter

HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

All prices quoted are approximate and may have changed





Tarantino's wild wild West

Filmmaker crafts an oddly intimate Western packed with his usual quips and violence



Daisy isn't your typical outlaw. But she's still every bit as deadly...

HCC VERDICT

The Hateful Eight

➜ Entertainment in Video
➜ Region B BD ➜ £25

WE SAY: Disappointing extras aside, this BD's superb AV presentation will wow home cinema owners

Movie: ★★★★½
Picture: ★★★★★
Audio: ★★★★½
Extras: ★☆☆☆☆
OVERALL: ★★★★½

➜ The Hateful Eight

On his way to the town of Red Rock to collect the sizeable bounty on his prisoner, outlaw Daisy Domergue (Jennifer Jason Leigh), John 'The Hangman' Ruth (Kurt Russell) picks up two travellers: fellow bounty hunter Major Marquis Warren (Samuel L Jackson) and former Confederate militiaman Chris Mannix (Walton Goggins), who claims to be Red Rock's new sheriff. When a powerful blizzard hits, they're forced to seek shelter in an isolated stagecoach stopover.

There they find themselves in the company of four strangers: Mexican Bob (Demián Bichir), hangman Oswald Mobray (Tim Roth), former Confederate general Sanford Smithers (Bruce Dern) and taciturn cowboy Joe Gage (Michael Madsen). But are they all who they claim to be? And if not, what are they really doing there?

Given its bum-numbing 168-minute runtime and the decision to shoot on 70mm, it would be reasonable to expect Quentin Tarantino's latest to be a rather lush addition to the Western category. But that isn't the case. Instead, it inverts the genre, placing the usual characters and tropes within the confines of a parlour drama.

This all risks invoking boredom, but it's pulled off with Tarantino's trademark memorable dialogue and shocking violence, giving the material an energy you wouldn't really expect from a film that is essentially nothing more than eight people sitting around in a room. And, this being a Tarantino flick, it's also packed with plenty of nods and winks to other titles, which should keep film buffs happy as they make a mental note of each and every one.

Picture: There's something rather sadistic about choosing to shoot a film in the super-wide Ultra Panavision 70 format (memorably employed for the likes of *Mutiny on the Bounty* and *It's a Mad, Mad, Mad, Mad World*) when much of the action takes place inside. Still, there's no denying that this Blu-ray's 2.76:1-framed 1080p image is absolutely stunning from start to finish. While colours run a touch cool, black levels are spot-on, detailing is immaculate and there's a fine patina of grain throughout an encode that steers clear of compression issues.

Audio: The disc's rich DTS-HD MA 5.1 mix does a fine job of handling all of the chatter, while simultaneously reinforcing the spaces the characters inhabit. The blizzard whips around the soundstage, and Ennio Morricone's score sounds sublime.

Extras: Just two short featurettes: the first looking at the decision to shoot on 70mm, the other a more general behind-the-scenes video.



Daddy's Home

Paramount → All-region BD
£25



Having already struck comedy gold with *The Other Guys*, Will Ferrell and Mark Wahlberg are at it again with a rather more formulaic, but still chuckle-worthy romp dealing with the rivalry between a sweet-natured stepdad and his stepkids' macho biological father. Shot digitally on Arri Alexa XT cameras, the film looks just as impressive as you'd expect. Rather more surprising is the presence of a DTS:X soundtrack on the disc. This isn't exactly a riot of surround sound activity, but there are a handful of scenes that make subtle use of the mix's extra headspace.

★★★★½

The 5th Wave

Sony Pictures → All-region BD
£25



Attempting to do for aliens what *Twilight* did for vampires and *The Hunger Games* did for dystopian futures, *The 5th Wave* is Sony Pictures' attempt to jump on the young adult bandwagon. Sadly, after a solid start that evokes both *ID4* and *V*, the film gets bogged down with stock characters and rote plotting (including the obligatory love triangle). The result is that any initial excitement you may have experienced quickly fades. On a more positive note, the BD's 2.40:1 1080p video and DTS-HD MA 5.1 audio are both excellent. Extras include a chat-track, five featurettes and 11 deleted scenes.

★★☆☆☆

Dad's Army

Universal Pictures → All-region BD
£25



Given the high regard in which the vintage BBC sitcom is still held, this bigscreen remake of *Dad's Army* was always going to struggle to win people over. Even so, it's hard to believe anyone expected it to be this clunky and contrived. Content to merely trade on our nostalgia, the film wastes its canny cast and struggles to come up with even one half-decent gag. This pointless endeavour does at least cut quite a dashing figure on BD thanks to a crisp 2.40:1 Full HD encode, while the DTS-HD MA 5.1 mix comes into its own during the finale. Two vapid promo videos are the only extras.

★★☆☆☆



Playing cops *and* robbers

Complex crime flick harks back to the bleak Hollywood thrillers of the 1970s

→ Triple 9

This gritty crime thriller from Australian director John (*The Proposition*) Hillcoat kicks off with an audacious bank robbery. However, while the job is a success, the five-man crew – Mike (Chiwetel Ejiofor), Russell (Norman Reedus), Gabe (Aaron Paul) and corrupt cops Marcus (Anthony Mackie) and Franco (Clifton Collins, Jr) – remain under the thumb of Irina (Kate Winslet), the wife of a Russian mob boss who has one more job for them if they ever want to get paid.

This merely involves breaking into a heavily-guarded government building and swiping some data regarding Irina's imprisoned husband. Trouble is, the only way they can see of drawing away police attention long enough to complete the job is to stage a 'Triple 9' (police-speak for an officer down). So it's a good thing that Marcus has just been stuck with a rookie partner on the force (Casey Affleck) who would make the ideal victim...

With an aesthetic style redolent of *Thief* and an opening sequence that can't help but recall the central set-piece from *Heat*, it's safe to say that the shadow of Michael Mann looms large over this twisted tale of morally-conflicted criminals and even dirtier cops. And while *Triple 9* doesn't quite hit the same heights as either of those films, this certainly shouldn't put you off. Under the careful control of Hillcoat, a seemingly familiar crime story is transformed into a thrillingly twisty (and twisted) piece of pulp cinema. Recommended.

Picture: Although it was shot digitally using various Arri Alexa cameras, *Triple 9* has clearly undergone a lot of post-production manipulation to make it appear more like the sort of '70s crime films it thematically resembles. So, in addition to the neon reds and greens that dominate the palette, the image is also swathed in a thick layer of digital grain. Thankfully, this doesn't have too much of an impact on fine textures, with well-lit close-ups still revealing plenty of detail.



Better red than dead

Audio: *Triple 9* sports a powerful DTS-HD Master Audio 5.1 soundtrack that makes aggressive use of the entire soundstage. The surround speakers are employed repeatedly, while bass is thrillingly tactile. The highest praise, however, is reserved for the mix's treatment of Atticus Ross's superb score, which anchors everything together via its raw, electronic soundscape.

Extras: All we get are two promo featurettes (*Under the Gun* and *An Authentic World*) that both clock in at under three minutes, plus four deleted scenes and 41 minutes of EPK-style interviews with the cast. >





HCC VERDICT

Triple 9
→ Entertainment One
→ Region B BD → £20

WE SAY: Genre fans should definitely pick up this gripping thriller, even if the disc's extras are a bit weak

Movie: ★★★½☆
Picture: ★★★★★
Audio: ★★★★½
Extras: ★★☆☆☆
OVERALL: ★★★½☆

DISC OF THE MONTH

The beast who walks... a lot

Leonardo DiCaprio gets his beard on in this outdoors revenge drama that cuts a swaggering figure on Ultra HD Blu-ray

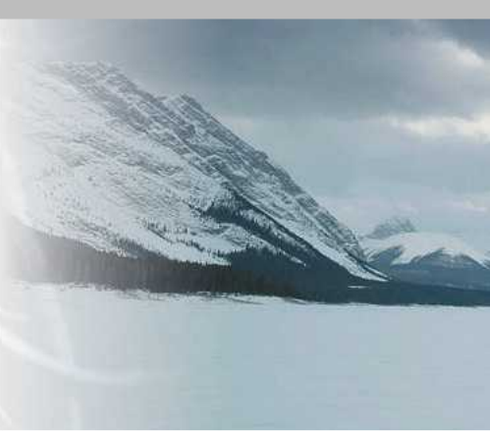




The Revenant's cast includes DiCaprio, Domhnall Gleeson and Tom Hardy

Emmanuel Lubezki: shooting to thrill

***The Revenant*'s stunning cinematography is the work of Emmanuel Lubezki. After picking up an Oscar for his work earlier this year, it meant Lubezki became the first to win the Academy's Best Cinematography gong three years in a row, having been honoured for *Birdman* in 2014 and *Gravity* in 2013. Remarkably, the lensman has been nominated five other times, including in 2006 for *Children of Men*, where he memorably worked with director Alfonso Cuarón to create supposed single-take action sequences. His next movie is *Weightless*, directed by Terrence Malick.**





➜ The Revenant

However badly your day might be going, it's probably a veritable party compared with what frontiersman Hugh Glass (Leonardo DiCaprio) endures during *The Revenant*'s two-and-a-half-hour running time.

After eye-wateringly brutal run-ins with local wildlife, Native American tribes and even members of his own fur-trapping party in the 19th century American wilderness, Glass embarks on a fraught journey of survival and revenge that's filled with more grit, grime and grizzliness than you've maybe seen in a single movie before.

Masterfully directed by Alejandro G. Iñárritu, shot with aplomb by cinematographer Emmanuel Lubezki (see below left) and acted with intensity by DiCaprio, *The Revenant* deservedly won three Oscars. It's a remarkable movie, even though your enjoyment of it depends on you overlooking a couple of colossal plot contrivances in its first half.

Picture: This is the first day-and-date UHD Blu-ray release (not a back-catalogue title, in other words), and a film as handsome as *The Revenant* should be tailor-made to highlight the high dynamic range (HDR) and 4K advantages of the format. And it doesn't disappoint.

Much of *The Revenant* was shot on location using natural light sources, and this turns out to be perfect HDR fodder. The H.265-encoded 2.40:1 picture's expanded luminance range adds another level of beauty to the film's poetic vistas; there's a tangible lifelike quality to the photography. Dark sequences retain plenty of detail, too, and the HDR 10 iteration adds to the scale of the huge landscapes versus the standard Blu-ray. Fires burn with so much intensity you'd swear you can feel their warmth, while the general sense of depth is further enhanced by the 4K detailing – this UHD platter's image is derived from a native 4K digital intermediate, and it appears to be a pristine source.

The colour palette is, as expected given the setting, a tapestry of blues, greens and browns, plus snowy whites – not the most visually impactful, but there's beauty to be found in its subtlety.

Comparing the UHD BD of *The Revenant* with the standard BD that Fox's release ships with, the BD suffers a noticeable drop in depth with largescale shots, as well as exhibiting a slightly mushy look to motion and generally appearing less crisp. By far the most striking limitation of the BD, though, is its lack of HDR, which leaves pretty much every shot appearing less spectacular, natural and 'alive'.

Yet by the standards of other 1080p Blu-rays, *The Revenant*'s transfer is first-rate, with as wide a contrast range as the format can offer, good detailing and no technical nasties. Once you've experienced the UHD version, though, your eyes are spoiled.

Audio: *The Revenant* features the same DTS-HD Master Audio 7.1 mix on both its Ultra HD and standard Blu-ray versions. This soundtrack is outstanding in its subtle detail placement, working tirelessly to create an involving sense of the size and variety of the environments Glass passes through, but not shy of energetic effects-panning when the onscreen action demands it. Also noteworthy is the beautiful richness of the film's minimalistic score, and the way action sequences explode with a brutal simplicity that reflects the way they are shot, not to mention a hefty dynamic punch.

All told, it's a precise, moody and entirely apt soundmix, but not offering a Dolby Atmos track – the film enjoyed one on its theatrical release – feels like a missed opportunity.

Extras: The only extras (both available on the standard BD, not the Ultra HD BD) are a 45-minute *Making of...* documentary, and a six-minute stills gallery. The documentary (which you may already have seen on YouTube) combines behind-the-scenes footage and informative interviews to excellent effect – but it's a pity we don't get anything else, such as a director's commentary. >

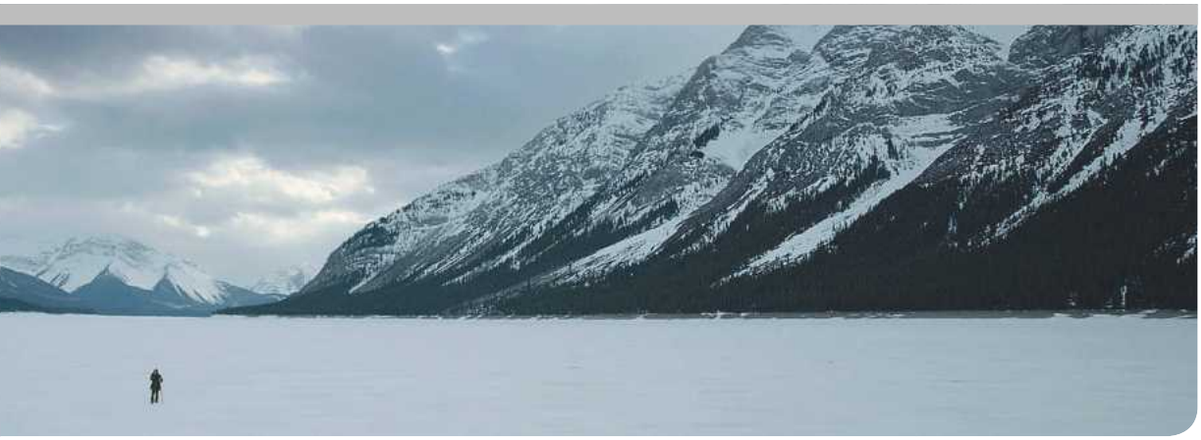


Leo didn't like anyone criticising his dress sense



DiCaprio claims he slept in animal carcasses while filming the movie





HCC VERDICT

The Revenant

➜ Twentieth Century Fox
➜ Ultra HD Blu-ray ➜ £28

WE SAY: A poster boy for Ultra HD Blu-ray – and a good film to boot – but no Atmos mix? Boo.

Movie: ★★★★½
Picture: ★★★★★
Audio: ★★★★½
Extras: ★★½☆☆
OVERALL: ★★★★☆

Arcade Action

Bigscreen home entertainment isn't just about movies anymore. **Anton van Beek** checks out a videogame vying for time on your home cinema system...



Dark Souls III

Bandai Namco ➜ PS4, Xbox One, PC ➜ £50



Dying in a game by Japanese developer FromSoftware is nothing new. In fact it's something you'll do over and over again as, for years now, the company has been working diligently at reminding gamers that the sweetest of victories come from triumphing against real challenges, not from being spoon-fed achievement after achievement. And nowhere has this been more apparent, or proved more popular, than in the *Dark Souls* franchise.

Less revolution than evolution, *Dark Souls III* will be immediately familiar to any gamers who hacked and slashed through either of the previous instalments in the series. Once again the game takes the form of a third-person action-adventure that sees you farming souls, raising stats and improving your weapons as you cut a swathe through the large-scale Kingdom of Lothric, a fantastical landscape populated by all manner of unspeakable horrors.

Between the bloody bouts of combat you're encouraged to explore the world at your leisure, encountering NPCs (including a few familiar faces) who are on hand to offer assistance by selling you goodies or revealing a little more of the game's complex lore.

The biggest change to the already impressive combat mechanics comes from the improvements in dual-wielding weapons. While this was possible in the previous titles, it was a fairly cumbersome affair. The addition of specific dual-weapons makes things more enjoyable, with one offering a standard attack, while the other (taking a cue from the developer's superb 2015 hit *Bloodborne*) can be charged up for an even more powerful hit.



As you'd expect from FromSoftware, *Dark Souls III* also looks absolutely magnificent, with the design of the bosses being particularly impressive (not to mention utterly terrifying). However, it's not quite perfect as the sheer scale of the action, and the size of the game-world itself, impacts noticeably on the frame rate from time to time.

But neither this technical issue nor the lack of any truly significant developments when it comes to the core game mechanics can stop *Dark Souls III* from being a worthy finale to one of the greatest franchises of recent times.

★★★★½

Expresso Bongo

BFI Flipside ➜ Region B BD & R2 DVD
£20



Val Guest's 1959 musical satire stars Laurence Harvey as a fast-talking East End hustler who believes he's discovered the key to fame and riches in the form of a teen singer and bongo player (a youthful Cliff Richard). It's all utterly bonkers, but also heaps of fun – and it provides a fascinating window into British youth culture of the era. The BFI's lovingly restored hi-def platter includes both the original cut of the film and the 1962 re-release (which removed three songs not performed by Cliff), plus two archival short films, a stills gallery and the trailer.

★★★★★

In a Lonely Place

Criterion Collection ➜ Region B BD
£25



Humphrey Bogart delivers an unforgettable mix of barely-contained violence and self-destructive cynicism playing a washed-up Hollywood screenwriter suspected of murder in Nicholas Ray's morally ambiguous 1950 film noir. Sourced from a 35mm fine-grain master positive made from the original camera negative, Criterion's 2K restoration is in excellent shape, conjuring up inky blacks, crisp whites and an endless array of balanced greys in between. Informative extras include a scholarly chat-track, a 1975 doc about Nicholas Ray and an appreciation of the film by Curtis Hanson.

★★★★★

Vinyl: The Complete First Season

HBO ➜ All-region BD
£40



The brainchild of Mick Jagger and Martin Scorsese, this new series about a New York record label president trying to save his floundering company in the 1970s delivers everything you'd expect from the era and from US cable network HBO. In other words, it's your typical tale of sex, drugs and rock 'n' roll, with a spot of murder thrown in for good measure. Adding to your enjoyment is HBO's top-notch Blu-ray package, which delivers authentically grainy 1080p video, sensational DTS-HD MA 5.1 audio, an informative *Making of...* and three chat-tracks.

★★★★½



Drac treats the girls to another fang-tastic night on the town...



Doing the monster mash

The UK release of this all-ages creature-feature doesn't reach the audio heights it should

➜ Goosebumps

Rumours of a film based on author R.L. Stine's *Goosebumps* series of young adult horror novellas have circulated ever since the mid-'90s. Hardly surprising really, when you consider that the range was selling around 4m copies per month at the height of its popularity.

But given the plethora of books to choose from, the clear issue has always been deciding which of them to adapt for a movie release. This fun flick gets around the issue by taking a more 'meta' approach that allows the filmmakers to throw in all of their favourite monsters from the series.

When Zach (Dylan Minnette) moves from New York to the sleepy town of Madison with his mother, he is convinced that excitement and fun are set to be things of the past. The only bright spot is his new neighbour Hannah (Odeya Rush), but even this is tainted by her father, the reclusive Mr. Shivers (Jack Black) who warns Zach to stay well away.

Before you know it, Zach and his friend Champ (Ryan Lee) have broken into Shivers' house one night and discovered a room full of locked *Goosebumps* manuscripts. Yet these are no ordinary books, and when opened they unleash their monstrous contents (abominable snowmen, deadly dummies, aliens, werewolves, zombies and more) on the streets of Madison. And, of course, it's up to Zach, Champ, Hannah and Mr. Shivers (who may not be everything that he seems) to banish the creatures back to the world of fiction.

The opening act may be forgettable, but *Goosebumps* steps it up notch or two when the creepy critters are set loose from the books. Here, it turns into something akin to a modern update of '80s cult favourite *The Monster Squad*, albeit with a more cartoonish (and varied) collection of creatures. Gags and action come thick and fast (the gnomes are a particular highlight), meaning that even if the film doesn't give you actual goosebumps, it'll still leave you and your junior AV-Holics smiling.

Picture: The digitally-sourced 2.40:1 1080p encode is effective, without ever really dazzling. Colours are stable, detailing is strong (especially in well-lit shots) and black levels are rock-solid. That said, the lasting impression of the transfer is one of flatness – which makes it all the more curious that a 3D *Goosebumps* Blu-ray is also available to buy (but wasn't made available for review).

Audio: This UK Blu-ray sports a jumpy DTS-HD MA 5.1 mix that would have easily won us over, if not for the fact that the US platter offers up a Dolby Atmos soundmix. Quite why Sony UK remains resistant to the object-based audio format is a mystery (particularly as there are no foreign language tracks included here that may require extra disc space). So in that regard it's a real disappointment.

Extras: At least UK buyers get the full array of bonus features that appeared on the US disc. There's a blooper reel, an alternate opening, seven deleted scenes (including an alternate ending), four short featurettes (one of which plays automatically after the end credits) and a gallery of screen tests. >



Whatever you do, don't call Slappy (below) a dummy!



HCC VERDICT

Goosebumps

➜ Sony Pictures ➜ All-region BD ➜ £25

WE SAY: There's plenty to enjoy about this film and disc – although the lack of the Atmos mix from the US release is a downer

Movie: ★★★½☆

Picture: ★★★★☆

Audio: ★★★★☆

Extras: ★★½☆☆

OVERALL: ★★★½☆



The one that got away...

Director Ron Howard struggles to get to grips with this fishy tale of epic proportions

→ In the Heart of the Sea 3D

Two decades after *Apollo 13*, director Ron Howard returns to the arena of the historical true-life survival drama. But this cinematic retelling of the infamous sinking of an American whaling ship (which would go on to inspire Herman Melville to write *Moby Dick*) lacks the heart and drive of his earlier blockbuster.

Told through a framing device in which Melville (Ben Wishaw) interviews a survivor still haunted by the disaster (Brendan Gleeson), *In the Heart of the Sea* recounts how the ship, *Essex*, was sunk by a massive sperm whale. Forced to take shelter in three smaller whaling boats, the survivors try to make it back to shore across hundreds of miles of open ocean, with limited supplies and the elements raging against them.

There's no denying that Howard has created a truly spectacular piece of cinema with *In the Heart of the Sea*. From the handsome period design to the superb visual effects, the film works brilliantly at putting you in the centre of the story's man-versus-nature action. But the script is far less effective when it comes to characterisation, particularly in Howard's attempts to get to grips with the conflict between the ship's veteran whaler-turned-first mate Owen Chase (Chris Hemsworth) and its inexperienced captain George Pollard (Benjamin Walker). Due to this, the film's flirtations with the monomania that powers *Moby Dick* feel weightless, and end up robbing it of the drive the second half of the story so desperately needs.

Picture: This two-disc set serves up 2D and 3D 1080p presentations of the movie, and while the former looks every bit as impressive as you'd hope, it's the latter that's the real star here. Much of the success for this can probably rest on the shoulders of cinematographer Anthony Dodd Mantle, who has already proved his affinity for the technology in 2012's superior sci-fi actioner *Dredd*. Stylish and immersive, it's a thrilling reminder of the huge impact 3D can have when it's in the right hands.

Audio: The Blu-ray's Dolby Atmos soundtrack is every bit the match for the superb 3D imagery. Noises of life onboard a ship surround you at all times, while major action beats, such as an early storm (Chapter 3) or the whale's attack (Chapter 6), fizz with immersive and dynamic effects.

Extras: A solid selection of bonus bits takes the form of 15 short behind-the-scenes vignettes, four longer *Making of...* featurettes, 16 deleted scenes, four extended scenes and a half-hour doc about the fate of Captain Pollard's subsequent ship.







The human drama here is less convincing than the film's depiction of a giant whale trashing a ship...

HCC VERDICT

In the Heart of the Sea 3D

→ Warner Bros → All-region BD → £28

WE SAY: A stunning AV package for a spectacular but hollow story of man-versus-nature

Movie: ★★½☆☆
Picture: ★★★★★
Audio: ★★★★★
Extras: ★★★☆☆
OVERALL: ★★★☆☆

Taxi: The Complete Series

Mediumrare → R2 DVD
£70



Was there ever a sitcom with a greater array of talent (on both sides of the camera) than *Taxi*? The brainchild of James L. Brooks (latterly of *The Simpsons* fame), this witty and increasingly surreal show about a fictional New York cab company was built around a terrific ensemble cast that included Danny DeVito, Christopher Lloyd and Andy Kaufman among its comedic heavy-hitters. This long-overdue DVD boxset collects all five seasons and although there's room for improvement in the AV stakes (and a shortage of bonus features) it should keep fans happy.

★★★½☆

Silicon Valley: Season Two

HBO → All-region BD
£30



This second 10-episode outing for Mike Judge's comedy about a tech startup proves that there's plenty of hilarity to be mined from its (all-too-believable) peek behind the closed doors of Silicon Valley tech firms. This time around the Pied Piper gang must deal with a lawsuit from tech giant Hooli, forcing them to accept the help of an unpredictable billionaire – who may be an even bigger problem in the long run. As we've come to expect from HBO, this two-disc set's AV quality is first-rate. Extras include six episode commentaries.

★★★★★

Youth

StudioCanal → Region B BD
£23



Italian director Paolo Sorrentino channels Fellini with this wise and witty film focusing on two aging friends (played by Michael Caine and Harvey Keitel) as they reflect on their lives during a stay at an exclusive spa hotel. Whatever *Youth* may lack in momentum, it more than makes up for with its superb performances, emotional resonance and spellbinding visuals. And, speaking of the latter, this Blu-ray's 2.40:1 1080p encode is a real stunner, loaded with warm colours and intricate textures. The DTS-HD MA 5.1 mix also impresses with its musicality and playful use of the surrounds.

★★★★☆

The Zero Boys

Arrow Video → All-region BD & R0 DVD
£18



A paintball team pick up their girlfriends and head into the woods to celebrate a recent victory, only to find themselves the targets of a group of deranged killers in this enjoyable 1986 horror-action hybrid. Having already worked wonders with writer-director Nico Mastorakis' notorious *Island of Death*, Arrow delivers a similarly impressive Blu-ray package here. Based on a new 4K restoration, *The Zero Boys* looks better than ever on Blu-ray, while the cleaned-up LPCM stereo soundtrack gets the best out of Hans Zimmer's punchy score. The disc is also loaded with plenty of goodies.

★★★½☆

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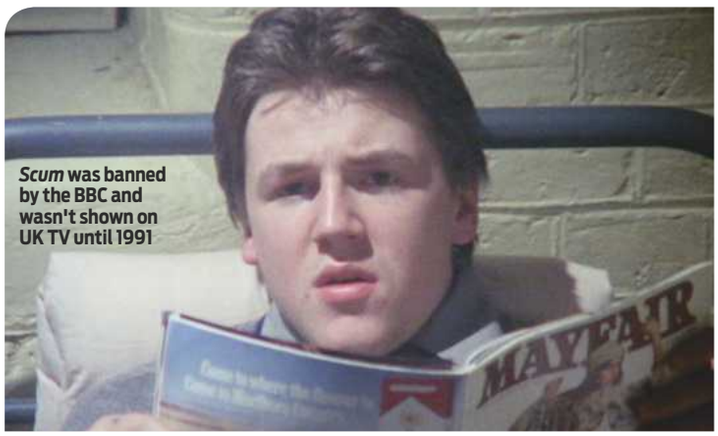
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Scum was banned by the BBC and wasn't shown on UK TV until 1991






Northern Ireland's *Elephant* in the room


Elaine showcases Clarke's skill with female characters






Politics and romance mix to strong effect in *Nina*



Celebrating a maverick spirit

The BFI charts the work Alan Clarke did for the BBC with an astonishing new boxset

Dissent & Disruption: Alan Clarke at the BBC (1969-1989)

The 1970s saw the British film industry at its lowest ebb, with the biggest domestic box office hits of the decade coming from TV sitcom spin-offs (1971's *On the Buses* actually beat out *Diamonds Are Forever* at UK cinemas) and flaccid sex comedies. But cinema's loss was television's gain, and filmmakers interested in dealing with more challenging and experimental concepts found an outlet for their work on the small screen instead.

Liverpudlian director Alan Clarke is a typical example. While he got his start directing episodes of *A Man of Our Times* and *Half Hour Stories* for ITV contractor Rediffusion, he found an unlikely home for his (frequently controversial) style of social-realist drama within the BBC.

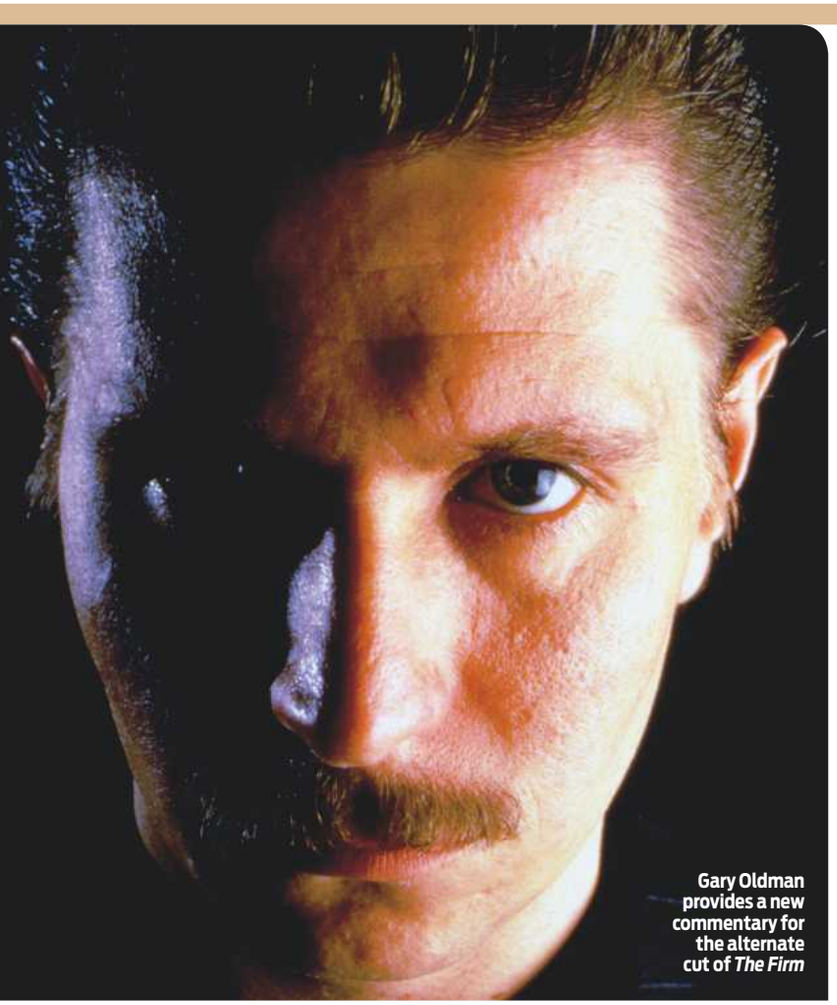
The BFI's 13-disc boxset (made up of 11 BDs and two DVDs) is the first attempt at bringing together all of Clarke's surviving work from this period. In doing so, it gives those unfamiliar with the director outside of his best-known works (*Scum*, *Made in Britain*, *The Firm*) a chance to see why his TV dramas proved so hugely influential on filmmakers such as Shane Meadows, Danny Boyle and Peter Greengrass, who grew up watching them.

Kicking off with an HD presentation of the *Half Hour Stories* episode *George's Room* (1967), the full list of plays included in the set is as follows: *The Last Train Through Hardcastle Tunnel* (1969); *Sovereign's Company* (1970); *The Hallelujah Handshake* (1970); *To Encourage the Others* (1972); *Under the Age* (1972); *Horace* (1972); *The Love-Girl and the Innocent* (1973); *Penda's Fen* (1974); *A Follower for Emily* (1974); *Diane* (1975); *Funny Farm* (1975); the original TV version of *Scum* (1977); the never-before-seen





David Bowie (above) stars in Clarke's adaptation of Brecht's play *Baal*



Gary Oldman provides a new commentary for the alternate cut of *The Firm*



Road **is the subject of a TV debate show included among this boxset's bonus features**



Clarke got into more hot water with his casual depiction of teenage drug addicts in *Christine*

documentary *Bukovsky* (1977); *Nina* (1978); *Danton's Death* (1978); *Beloved Enemy* (1981); *Psy-Warriors* (1981); *Baal* (1982); *Stars of the Roller State Disco* (1984); *Contact* (1984); *Christine* (1987); *Road* (1987); the original TV edit and the first ever presentation of Clarke's original cut of *The Firm* (1989); and *Elephant* (1989). And breathe.

Remembered today primarily as a master of bleak, violent and heavily politicised documentary-like dramas (none of which is in any way inaccurate), the opportunity to view so much of his work together reveals other sides to Clarke. Perhaps the biggest surprise, given the machismo inherent in the subject of so much of his work, is his knack with believable female characters. Okay, so several may only exist at the margins of the stories they inhabit, but they're more fully fleshed-out than most of the leading ladies of other TV dramas of the era.

The BFI's set also highlights Clarke's directorial skills. Naturally, his films aren't particularly flashy, often favouring unobtrusive and detached cameras, giving the material a sense of documentary realism. And yet few filmmakers have ever made such effective or iconic use of Steadicam cameras as Clarke did, especially in his 'walking films'.

Not everything here hits the mark (the alternate reality sci-fi of *Stars of the Roller State Disco* fails to gel), but the few plays that falter are minor blips in an otherwise astonishing career. We hope this boxset convinces the rights-holders of Clarke's other works (including his 1983 ITV drama *Made in Britain* and 1987 movies *Billy the Kid and the Green Baize Vampire* and *Rita, Sue and Bob Too!*) to release them on BD.

Picture: Due to the decision to present all of the contents in chronological order, of the 13 discs in the boxset, all but two are Blu-rays that offer 1080i50 presentations of dramas shot on 16mm film, and the same for others that were shot in studio on video and have been transferred from original PAL transmission tapes. The other two discs are Disc Nine (containing *Psy-Warriors* and *Baal*, both of which were shot on video) and a bonus disc (see 'Extras', below), which are understandably presented as standard-definition DVDs.

Coming up with a single rating for the image quality is quite difficult. While the video-based titles are handled as well as could be hoped for, the relative lack of resolution in the source material means there's only so much that can be done with them. However, those sourced from 16mm prints look sensational, capturing the grain, colour and detail of the original footage perfectly (with the exception of the additional footage in the alternate cut of *The Firm*, which was sourced from an ungraded workprint of noticeably poorer quality).

Audio: The discs all offer LPCM dual-mono tracks, with the exception of the DVDs, which opt for Dolby Digital dual-mono instead. As you'd hope, they've all been cleaned up, with the all-important dialogue sounding natural and well-balanced in the mixes.

Extras: The centrepiece of an extensive and exhausting array of bonus features is a superb new 12-part documentary about Clarke's career. Other highlights include a bonus DVD containing six more *Half Hour Stories* directed by Clarke and a 200-page book of essays about the titles included in the set. >



Sovereign's Company **shows Clarke's interest in exploring British institutions**

HCC VERDICT

Dissent & Disruption: Alan Clarke at the BBC (1969-1989)

→ BFI → Region B BD & R2 DVD → £150

WE SAY: If there's a better (or more comprehensive) Blu-ray boxset this year we'll eat our hats. Magnificent.

Movie: ★★★★★
Picture: ★★★★½
Audio: ★★★½☆
Extras: ★★★★★
OVERALL: ★★★★★



Giallo girls just wanna have fun

And if that happens to involve a spot of murder, then who are we to get in their way?

→ Killer Dames: Two Gothic Chillers by Emilio P. Miraglia

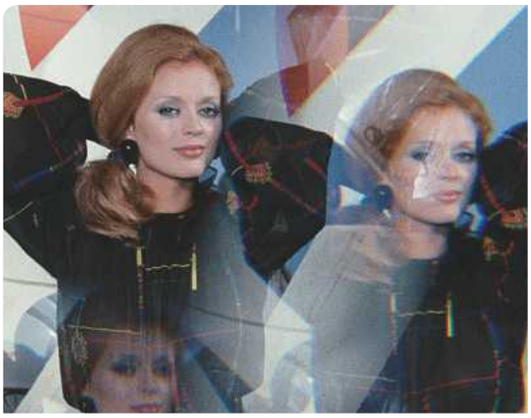
Arrow Video's ongoing quest to give every classic Italian *giallo* it can get its hands on a hi-def makeover continues with this double-pack of terrific murder-mysteries from director Emilio P. Miraglia.

The Night Evelyn Came Out of the Grave (1971) tells the story of nutty English aristocrat Alan (Anthony Steffen), who has never gotten over the death of wife Evelyn and now likes nothing better than bringing women back to his stately home and killing them in his dungeon. Mercifully, Alan's troubled life gets turned around when he meets and quickly marries the gorgeous Gladys (Marina Malfatti). But any thoughts of marital bliss are short-lived as they become dogged by sightings of a spectral figure and a series of unexplained murders.

The Red Queen Kills Seven Times (1972) centres on sisters Kitty (the bambi-eyed Barbara Bouchet) and Franziska (Malfatti, again), who are haunted by an ancient curse which says that every 100 years the malicious Red Queen will rise from her grave and kill seven people connected to their family. Can you guess how long it's been since the curse last struck?

Picture: According to the accompanying booklet, *The Night Evelyn Came Out of the Grave* and *The Red Queen Kills Seven Times* were 'exclusively restored' in 2K resolution from the original 35mm two-perf Techniscope camera negatives by Arrow at Bologne's L'Immagine Ritrovata.

In both instances, the results are very impressive, with the 2.35:1-framed 1080p encodes showcasing excellent stability, strong colour reproduction and consistent fine detailing. The dense grain structure is also handled sympathetically by both transfers, ensuring that these digital presentations retain an authentically film-like appearance.







Gothic heroines Marina Malfatti (top) and Barbara Bouchet (above)

Audio: Both films are accompanied by a choice of Italian and English tracks, presented as DTS-HD Master Audio mono mixes. As with the visuals, the soundtracks have been given a polish and, while the source material may lack a little in the way of dynamic range, there are no technical imperfections to blight your *giallo* double bill.

Extras: Each film is supported by newly-recorded audio commentaries, interviews and video essays, plus a selection of archival goodies including video introductions, further interviews and trailers.

The boxset (limited to 3,000 copies) also ships with a glossy 60-page booklet containing four essays about the films and their director.

HCC VERDICT

Killer Dames: Two Gothic Chillers by Emilio P. Miraglia

→ Arrow Video → Region A/B BD & R1/R2 DVD → £33

WE SAY: Superb HD presentations of two stylish and unique films make this a must-have for *giallo* lovers

Movie: ★★★★★
Picture: ★★★★★
Audio: ★★★½★
Extras: ★★★★★
OVERALL: ★★★★★

Shivers (2nd Pressing)

Arrow Video → Region B BD & R2 DVD
£16



When it was first released back in 2014, Arrow's Blu-ray release of David Cronenberg's feature debut initially impressed with its extras and a new restoration by Tiff Cinematheque Quebec. Sadly, it soon became apparent that the restoration was based on a censored master shorn of several seconds. An uncut version is now available, and while it's been a long old wait, it's undoubtedly the definitive HD release of this classic fright flick. A disc replacement scheme is being offered for owners of the initial disc – check out www.facebook.com/ArrowVideo/posts/1173384119362247 for more info.

★★★★½

The Forest

Icon → Region B BD
£23



Located in the shadow of Mount Fuji, Japan's Aokigahara forest is a notorious suicide hotspot and has become entrenched in local mythology as a place haunted by angry spirits. Hardly surprising then that it has been the setting for a clutch of horror flicks in recent years – of which *The Forest* is easily the best, thanks to some effective scares and Natalie Dormer's anguished central performance. The Blu-ray itself unleashes crisp and revealing Full HD visuals alongside a suitably foreboding DTS-HD MA 5.1 soundscape. Bonus bits include a chat-track and storyboards.

★★★½★

Creepshow 2

88 Films → Region B BD
£15



This sequel to George A. Romero and Stephen King's 1982 anthology may fall some way short of reaching the comedy-horror heights of its predecessor, but it's definitely not a complete bust. While the three stories making up the film are stretched pretty thin, they all provide enough chills and gore – the highlight being *The Raft*, an adaptation of the Stephen King short story of the same name. In addition to an authentically film-like 1.78:1 1080p encode and choice of LPCM 2.0 and 5.1 soundtracks, this HD platter also includes retrospective interviews with Romero and Tom Savini.

★★★★★

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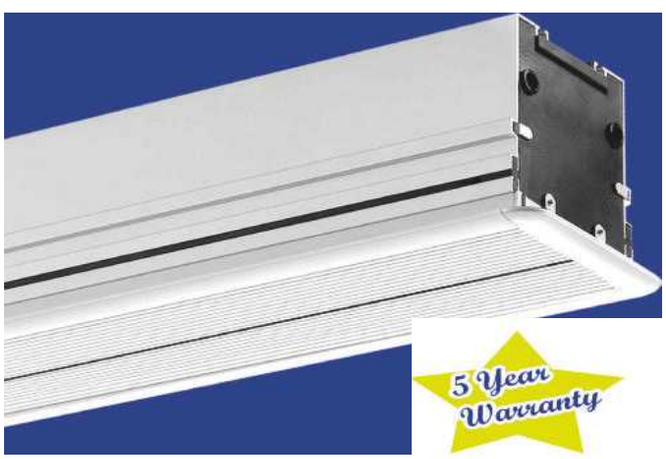
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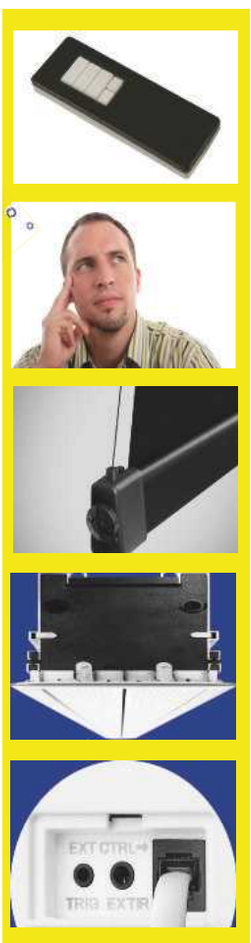


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SETC240WSF-ATR	2340 x 1320	92" x 52"	2935 x 155 x 170	16:9
SETC270WSF-ATR	2670 x 1500	105" x 59"	3245 x 155 x 170	16:9

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Collecting...

Quentin Tarantino

The Hateful Eight is just the latest flick in the 25-year career of a writer/director responsible for some of Hollywood's most celebrated – and controversial – movies. ***Team HCC*** enjoys the ride

Pulp Fiction

TOP PICK

The Quentin Tarantino film that made him famous, snaffled Oscars and turned Miramax Films into a major Hollywood player. And deservedly so – with its ensemble cast (including Bruce Willis and John Travolta) and multi-stranded plot, this is two-and-a-half hours of pitch-perfect sun-drenched noir, both funny and thrilling and endlessly quotable. Altogether now: 'Royale with cheese...'

Get it: The first BD release (from Lionsgate) in 2011 was a cracker, porting extras over from previous DVD incarnations and adding new material (presented in HD). A 20th Anniversary Edition from 2014 packs the same disc, but is also bundled with art cards, a replica Jack Rabbit Slims menu, a Big Kahuna Burger bag and more.



Pulp Fiction **grossed over $200m in cinemas from its sub-$10m budget**



Reservoir Dogs

Tarantino's debut feature roused ire with its profane language and bursts of graphic violence (and saw the film temporarily banned on VHS in the UK), but it's not a typical heist flick – the non-linear narrative and pop culture dialogue were über-fresh in 1992, marking its writer/director out as one to follow.

Get it: Available in standalone and collector's edition UK BDs (featuring lossy 5.1/6.1 audio). Retro AV fans can get it on LaserDisc too!



From Dusk Till Dawn

QT wrote the screenplay for this part crime thriller/part vampire horror directed by low-budget pal Robert Rodriguez. A lurid, blood-spattered frightener with a rich dose of humour, *From Dusk Till Dawn* is unlike anything that came before it. The two DTV sequels (and the recent TV series) are less successful – and that's putting it kindly.

Get it: Image quality doesn't dazzle on Lionsgate's BD, but UK buyers get oodles of bonus bits, unlike their US counterparts.



True Romance

An early Tarantino script turned into an enthralling road movie/romance directed by Tony Scott, just a year after *Reservoir Dogs*. Scott famously unpicked the time-jumping script to arrive at a straightforward narrative. Look out for Val Kilmer playing Elvis...

Get it: Warner Bros has done some great things on BD, but its *True Romance* releases (either the original 2009 outing or 2013 re-issue) aren't among them. Yes, Scott and QT are present in chat tracks, but the HD transfer doesn't do the movie justice.



Jackie Brown

Elmore Leonard's crime novel *Rum Punch* was adapted by Tarantino for his much-anticipated third spell behind the camera, casting then Hollywood down-and-outs Pam Grier and Robert Forster in lead roles that revitalised their careers. Perhaps his most unadventurous flick, but that doesn't mean it doesn't impress.

Get it: The UK release is another Tarantino BD loaded with extras. There was also a steelbook version with alternate artwork, but it appears to be out of print.



Natural Born Killers

Another of his scripts bought to the bigscreen by someone else. In this case, Oliver Stone took the job of turning Tarantino's musings on the relationship between media and violence into box office gold. The film that Stone delivered may not have been what studio Warner Bros was hoping for: a quick-edited, bawdy, psychedelic censor-baiting mashup. Brilliant in its own insane way.

Get it: Fans should ignore the theatrical version and get the director's cut. A 2014 region-free US 'diamond luxe' release bundles them both with tons of extras.



Death Proof

An homage to the 'grindhouse' movies of the '70s (and released in the US in a double bill called *Grindhouse* with Robert Rodriguez's *Planet Terror*), this deliberately grimy auto-slasher flick is most noteworthy for Tarantino's thrilling chase sequences and Zoë Bell – a stuntwoman playing a stuntwoman – duking it out with Kurt Russell's baddie.

Get it: An 87-min edit features on the *Grindhouse* BD; the standalone *Death Proof* release packs the 114-min 'international' cut.



Kill Bill

Although split into two separate theatrical releases in 2003 and 2004, *Kill Bill* is best considered as one long, lavish, martial arts masterpiece (and was released in 2011 as such under the moniker *The Whole Bloody Affair*). Stylish fun that's a must for 'fu freaks.



Get it: These days you can bag both movies (with pristine encodes) in a boxset for less than £10. A BD release of *The Whole Bloody Affair* would be good, but as Tarantino has occasionally teased a third part to the saga, that might be on hold.



Inglorious Basterds

Tarantino fans salivated when he said he was making a WW2 movie, but the end result isn't the *Dirty Dozen* throwback many expected, focusing less on bombastic set-pieces in favour of tense, dialogue-heavy scenes. Perhaps the QT movie that splits audiences the most.

Get it: Universal's 2009 Blu-ray excels when it comes to AV quality, and is peppered with extra features, including a look at the film-within-a-film *Nation's Pride*. A 'limited edition' version also offers art prints, alternate slipcase and more.



Django Unchained

Having talked previously of his love of Westerns, Tarantino released this 'Southern' in 2012, casting Jamie Foxx as a slave seeking to rescue his wife from Leonardo DiCaprio's Mississippi plantation owner, aided by an oddball bounty hunter (Christophe Waltz). While the usual QT stuff is here – wince-inducing violence, homages to other flicks, a role for Samuel L Jackson – there's a big-budget opulence about *Django Unchained* that makes it perhaps his most accomplished movie yet.

Get it: The 2013 Sony Pictures UK Blu-ray features DTS-HD 5.1 audio to accompany the gorgeous 2.40:1 hi-def image, plus a couple of interesting extra features.

Have we missed your favourite Tarantino movie?
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SELECT

➜**GEAR GUIDE** **TELEVISIONS** From entry-level 40in LEDs to flagship 4K monsters **BLU-RAY PLAYERS** Which deck rules the roost? **PROJECTORS** It's time to blow up your video! **AV RECEIVERS** 5.1, 7.1, 9.2 – we've got all the options covered **SPEAKERS** Killer surround sound setups for all rooms and budgets **PVRs** Including super-slim Freeview boxes and Sky+HD **AND MORE!**



HCC RATINGS KEY...

Outstanding	★★★★★
Above average	★★★★☆
Acceptable	★★★☆☆
Disappointing	★★☆☆☆
Dire	★☆☆☆☆

All prices quoted are approximate and may have changed

TOP 10 Televisions

1 

Panasonic TX-65DX902B → £3,300
★★★★★

This HDR-capable 65-incher wears its Ultra HD Premium certification with pride, and employs a full-array backlight to take control of its impressive luminance talents. Imagery is excellent; overall styling is appealing too. *HCC #259*

2 

Panasonic TX-65CZ952B → £7,300 ★★★★★
Price tag and curved panel will put some off, but this OLED delivers on its high-end promise with show-stopping black levels and masterful colour handling. *HCC #256*

3 

LG 65EF950V → £3,700 ★★★★★
An OLED TV with a flat rather than curved screen has instant home cinema appeal. Typically involving UHD performance, but not without some uniformity issues. *HCC #256*

4 

Samsung UE55KS9000 → £2,100 ★★★★½
Samsung's quantum dot/edge LED 4K/HDR looker claims UHD Premium certification. Image quality is routinely great, but light banding can distract and 3D is absent. *HCC #260*

5 

Sony KD-55XD9305 → £2,000 ★★★★☆
Slim-line Android TV that dazzles with its smart design. New backlight tech promises HDR fireworks, but it's not the most subtle when it comes to illumination. *HCC #260*

6 

Panasonic TX-50DX750 → £1,300 ★★★★☆
Mid-range 4K/HDR LED TV. Not as impactful as its DX902 stablemate when it comes to pictures, but a neat design, fun UI and appealing screen size will win it plenty of fans. *HCC #260*

7 

Panasonic TX-50CX680 → £650 ★★★★☆
Impressive and affordable Ultra HD TV with a slinky desktop stand. Highlights include its assured upscaling, authentic colours and foolproof user experience. *HCC #257*

8 

Hisense 65XT910 → £2,300 ★★★★☆
The Chinese marque throws down the UHD/HDR gauntlet to its better-known rivals with this big, well-priced, high-spec TV. Bright and clear images, but short on motion subtlety. *#257*

9 

Hitachi 49GHT69U → £500 ★★★½☆
49in 4K screen that could appeal to those on tight budgets. This £500 set offers a smattering of catchup, decent connectivity and a generally enjoyable image. No HDR support, though. *HCC #260*

10 

Philips 55PUS8601 → £1,700 ★★★½☆
The detachable side-mounted speakers, slim bezel and Ambilight make this upper midrange 4K set stand out. Imagery is bright and colourful, but black depth is average. *HCC #258*

TECH INFO: TELEVISIONS



What? No plasma?: The TV market is now dominated by LED-lit LCD screens. Manufacture and sale of plasma display panels (PDPs), which previously came into play above 42in, has ceased. With LED comes newer technologies. 4K models with a native resolution of 3,840 x 2,160 should at least be on your audition list if you're thinking of a new display; curved models are a consideration if you want to impress the neighbours. Look out for sets claiming support for HDR content, which is part of the forthcoming UHD Blu-ray spec.



Active or Passive: At the beginning of the 3D era, most TVs featured the Active system that uses relatively expensive, powered 3D specs to deliver full-res images to each eye. Passive 3D TVs, which are now more common, have a filter over the screen and use non-powered specs with polarising filters. The glasses are cheap as chips, but the resolution of Full HD 3D is halved to 540 lines horizontally (but remains at 1,920 vertically). The same halving occurs with a 4K screen. Some brands offer both Passive and Active models, depending on the panel used. Glasses-free 3D, heralded by Toshiba's early ZL2 TV, hasn't caught on. The tech is still being worked on, though.

TOP 5 Blu-ray movies



Sicario
Tense, tight 'war on drugs' thriller from rising star Denis Villeneuve with a classy cast and an addictive, precise Dolby Atmos soundmix. The Blu-ray encode relishes Roger Deakins' smart cinematography, too.
★★★★½



Star Wars: The Force Awakens
Mostly brilliant return to the world of wookies, lightsabers and the Dark Side. Although Disney says it's saving a 3D BD for later this year, this excellent 2D disc will do for most AV fans.
★★★★½



The Martian
Matt Damon stars in this enjoyably science-tastic Red Planet adventure. Sound and picture both excel on Warner's Blu-ray, but we expect a Special Edition with a longer cut and more extras later this year.
★★★★☆



Bridge of Spies
Enthralling thriller from Steven Spielberg packed with first-rate performances and keen attention to detail. The BD is an AV stunner, too, although it misses a trick when it comes to extra features.
★★★★☆



Creed
Sly Stallone's Rocky returns to the ring to train upstart boxer Adonis Creed in this classy, heartwarming drama. Warner's disc is lightweight when it comes to extras, but the Full HD picture and 7.1 mix pack a punch.
★★★★☆

TOP 10 Blu-ray players

1 

Panasonic DMP-UB900 → £600
★★★★★

Boom! The Ultra HD Blu-ray format gets an inspiring debut in Panasonic's multi-talented deck that offers welcome user tweaks and a sterling picture performance. Smart skills include 4K-enabled VOD apps. *HCC #259*

2 

Oppo BDP-103D → £600 ★★★★★
This deck adds Darbeer Visual Presence processing to the already excellent AV skills of its BDP-103EU predecessor. Superb construction, usability and features/connections. *HCC #228*

3 

Pioneer BDP-LX88 → £1,100 ★★★★★
The Japanese corp returns to the disc-playing high-end with a universal deck that weighs more than your AVR and drips with user tweaks and processing features. Stonking performer. *HCC #246*

4 

Oppo BDP-105D → £1,100 ★★★★★
This heavyweight deck builds upon the premium picture performance of the BDP-103D with a wealth of audiophile upgrades – if you're serious about music, check it out. *HCC #234*

5 

Arcam FMJ UDP411 → £1,200 ★★★★½
Pristine visuals – including upscaled SD – and a classy sonic performance grant this Arcam instant appeal. The design and build is commensurate with the premium price tag. *HCC #244*

6 

Sony BDP-S7200 → £180 ★★★★½
A Sony deck without the curious angular design, the BDP-S7200 offers SACD support, hi-res audio streaming and 4K upscaling that's worth investigation. Not too pricey, either. *HCC #239*

7 

Cambridge Audio CXU → £900 ★★★★½
Styled to match the brand's other CX components, this universal deck matches its audio and video chops with plenty of features, including Darbee and HDMI switching. *HCC #253*

8 

Pioneer BDP-LX58 → £500 ★★★★½
Short on 'net content and a bit slow in use, but these are minor complaints – this model (which ranks below the BDP-LX88) is a gorgeous, thoroughbred Blu-ray performer. *HCC #250*

9 

Samsung UBD-K8500 → £430 ★★★★☆
Ultra HD Blu-ray player that'll find fans courtesy of its sensible price point, connected smarts and eye-catching visuals. Build quality is a little uninspiring. *HCC #260*

10 

Samsung BD-J7500 → £150 ★★★★☆
This well-priced spinner offers twin HDMI outputs and multichannel phono audio for flexible system hookup, an appealing design, smart features and solid AV chops. *HCC #247*

TECH INFO: BLU-RAY PLAYERS

Matching your deck to your AV receiver: Blu-ray decks are designed to deliver top-notch images but Blu-ray is also about enjoying superior quality sound. When choosing a player, bear in mind the connectivity and decoding features of your AV receiver.
If you're still using an older model that doesn't offer HDMI inputs, then you'll need a Blu-ray player with multichannel analogue audio outputs to enjoy decoded hi-res surround sound formats. Similarly, older but still HDMI-equipped receivers may not be able to cope with 3D/4K/HDR output signals, in which case you'll need a deck with dual HDMI outputs – one channelling audio to your receiver amp, the other piping video direct to your TV.

What about the PlayStation?: Sony's console still represents an easy path to hi-def heaven. For a low-budget home cinema system, the £150 PS3 Super Slim makes a decent choice – especially if you like playing games. Control via a joypad is a pain, though, and the console runs more noisily than most BD spinners. The more expensive PS4 is a much better gaming machine, and now available in a 1TB version.



DEMO DELIGHT

Star Wars: The Force Awakens: Disney's 1080p BD offers a reference-quality 2.40:1 image, finding detail and depth in the 35mm/75mm photography, and relishing the colour-rich environments of this blockbuster sci-fi. Awesome.

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TOP 10 Projectors

1 

Sony VPL-VW520ES → £8,800
★★★★★

The top dog in Sony's domestic SXRD projector range, this couples native 4K optics with HDR compatibility for a state-of-the-art performance. Capable of jaw-dropping imagery and offers plenty of install flexibility. *HCC #254*

2 

Epson EH-LS10000 → £6,000 ★★★★★
Debuting a laser light source (30,000 hours) and Epson's 4K enhancement processing, this large chassis model is a cinematic triumph. Essential audition for a dedicated room. *HCC #247*

3 

JVC DLA-X7000 → £5,700 ★★★★½
With contrast and brightness improvements over the more affordable DLA-X5000, this is a great bigscreen option, although its SDR performance impresses more than HDR. *HCC #259*

4 

Epson EH-TW7200 → £1,800 ★★★★½
Priced to appeal to those unable to dabble in the £3,000 market, Epson's mid-ranger is a great purchase. No frame interpolation on offer, but colours, contrast and brightness impress. *HCC #232*

5 

Sony VPL-HW65ES → £2,800 ★★★★½
Bright, flexible Full HD projector with impressive image chops and decent calibration options. But you'll need to ask yourself if you really want a 4K model instead.... *HCC #258*

6 

Optoma HD50 → £1,000 ★★★★½
With a retweaked user interface that improves upon previous Optoma light-cannons, the 12V-trigger-toting HD50 is a brilliant budget buy. *HCC #239*

7 

JVC DLA-X5000 → £4,000 ★★★★☆
Fourth-gen eShift projector marries its pixel-shifting talents with a contrasty performance, HDR support and HDMI 2.0a. Not the smoothest with motion, and price tag is considerable. *HCC #257*

8 

BenQ W2000 → £800 ★★★★☆
Average black-level performance limits this model's all-round appeal, but elsewhere this Full HD DLP budget PJ catches the eye with its calibration options and detailed visuals. *HCC #257*

9 

Optoma HD91+ → £3,500 ★★★★☆
This LED/DLP Optoma claims a 20,000-hour lamp life. Setup features include a 1.9x zoom and image quality is generally excellent. Close in price to JVC's 4K eShift line, however. *HCC #252*

10 

Acer V7500 → £630 ★★★★☆
A 1.4x zoom, 3D support (glasses are optional), plus colour, gamma and white balance controls are the feature highs here. Sharp Full HD visuals with reasonable contrast. *HCC #258*

TECH INFO: PROJECTORS



Installation: Although projectors can be temporarily placed on a cupboard, stand or shelf situated at the rear of the room (use the adjustable feet on its base to level the image so that it aligns with the screen), a much better long-term solution is to mount it on your ceiling with an appropriate bracket. Projectors can be quite heavy, though, so it's important to ensure that the bracket is attached firmly – ideally, it should be secured to a joist. Position your PJ so that an imaginary line from its lens to the opposite side of the room hits the screen exactly half-way along its width. The location of your screen should therefore dictate where your projector is. A decent tape-measure or laser pointer will help you to determine the position.

Throw distance: Throw distance specifies the distance between the projector and screen for a focused image of given size. As the vast majority of projectors are equipped with a zoom lens, minimum and maximum throw distances are often specified – say, 3.01m to 6.08m for a 100in. 16:9 image. Shorter throw distances are ideal for smaller rooms, and longer ones for larger rooms. Simple.

Throw ratio: Sometimes, a manufacturer will quote a throw ratio rather than a throw distance. This is basically the throw distance divided by the image width. To get the projected image size, divide the distance between projector and screen by the specified figure. Once again, the inclusion of a zoom lens means that upper and lower figures are usually specified.

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Photo courtesy of Gary J.Fernandez

TOP 10 Speakers

1 

Monitor Audio Gold 300AV → £7,150
★★★★★

MA revamps its Gold Series and we pay serious attention. This big-ticket package excels across the frequency range, offers exquisite design and packs setup flexibility via the dipole/monopole FX surrounds. *HCC #251*

2 

Q Acoustics 3000 5.1 Cinema Pack → £700 ★★★★★
A superior compact package with driver improvements over the previous 2000i series. The two-way cabinets and dual-driver sub combine to offer impressive audio for the money. *HCC #247*

3 

XTZ Cinema Series 5.1.4 → £3,700 ★★★★★
Spectacular dynamics, gut-thumping bass and a sense of scale that most systems at this price only dream of – XTZ's 3D audio-ready setup is an easy recommendation. *HCC #259*

4 

KEF R Series 7.1 → £6,500 ★★★★★
A 7.1 array mixing dipolar and direct surrounds, this authoritative package takes its cues from KEF's Blade concept speaker and offers faultless, largescale home cinema sonics. *HCC #217*

5 

Monitor Audio Bronze B5 AV → £1,500 ★★★★★
Like their Gold siblings, these feature switchable surround speakers and MA's C-CAM drivers. Smaller in stature and output, but eminently more affordable. *HCC #254*

6 

Wharfedale Diamond 220 HCP → £850 ★★★★★
This package offers a lot for less than a grand – two-way surrounds, a potent three-driver centre channel and agile subwoofer. Great movie sound and excellent build. *HCC #248*

7 

DALI Opticon 5.1 → £3,200 ★★★★½
The Opticons employ driver designs created for DALI's higher-end models, and showcase a talent for both involving music presentation and high-octane home cinema. *HCC #260*

8 

Tannoy Revolution XTF 5.0 → £2,000 ★★★★½
The entry-level for Tannoy's Dual Concentric driver tech, the XTFs have real all-round appeal – the sound is both energetic and balanced. You'll need to add a sub, of course. *HCC #258*

9 

Q Acoustics Concept 5.1 Cinema Pack → £1,750 ★★★★½
Step-up Q Acoustics offering with handsome floorstanders joined by standmount surrounds employing the Concept Gelcore construction. Classy, consistently neutral performance. *HCC #257*

10 

JBL Arena 5.1 → £850 ★★★★☆
With horn-loaded tweeters derived from JBL's costlier packages, this floorstanding set doesn't skimp on impactful, dynamic thrills. Subwoofer is pretty basic. Solid sub-£1,000 array. *HCC #256*

TECH INFO: SPEAKERS



Centre speaker: Handles most of the dialogue and onscreen effects. Should be positioned above or below the screen as close to it as possible. Of course, if you're using a projector screen, it should ideally be placed behind it.

Front speakers: Left and right speakers should be positioned either side of the screen, in line with the centre. Turn the speakers in slightly to face the listener if there isn't an even movement of sound across the front of the room.

Subwoofer: Can be positioned wherever it sounds best or can be tucked out of sight due to the non-directional nature of low-frequency signals. Be aware that close positioning in corners or next to walls can create a boomy effect.

Surrounds: Position alongside the listener, pointing in or slightly behind the ears for a good surround effect. The back wall is not a good position for surrounds – it is, in fact, where you should locate the sixth and seventh speakers (rears) in a traditional 7.1 array.

DEMO DELIGHT

Mad Max: Fury Road: This outback actioner comes complete with an inventive, detail-packed Dolby Atmos soundtrack that has to be heard to be believed. Music and atmospheric effects are regularly shunted into the height channels, the subwoofer puts in a serious shift, and object placement is remarkable. Play it loud!



TOP 10 AV Receivers/AV Processors

1



Onkyo TX-NR3030 → £2,500
★★★★★

The big daddy of Atmos AVRs, this 11-channel design enables four height speakers to be added to an existing 7.1 array with ease. Lithe on its feet and with exemplary steering, this is multichannel audio at its best. *HCC #245*

2



Denon AVR-X7200WA → £2,500 ★★★★★
Now upgraded to DTS:X, and sporting HDCP 2.2 support, this Atmos AVR is as futureproofed as it gets. Only a nine-channel design, though. *HCC #248*

3



Arcam AVR850 → £4,200 ★★★★★
High-end seven-channel AVR marrying Class G amplification and Atmos (and future DTS:X) support with talented Dirac Live Room EQ. 11-channel pre-outs for full-full setups. *HCC #257*

4



Marantz AV8802A → £3,350 ★★★★★
This 11.2-channel next-gen processor (Atmos, DTS-X and Auro-3D) is an obvious upgrade for a high-performance separates system. Luxuriant, natural sound quality. *HCC #253*

5



Denon AVR-X1200W → £300 ★★★★★
Excellent budget seven-channel option, packing 3D audio support, 4K/HDR-capable HDMI inputs and a lively, neutral audio performance. Good-looking and easy to use, too. *HCC #259*

6



Denon AVR-X6200W → £1,800 ★★★★½
Less powerful than the X7200WA, but less expensive too, and this nine-channel next-gen AVR proves wonderfully adept at digging out the details and thunder in your Blu-rays. *HCC #258*

7



Pioneer SC-LX89 → £2,100 ★★★★½
Controlled but lively-sounding 9.2-channel AVR (Atmos, DTS:X) that's packed with tweaks. MCACC calibration impresses, but the overall complexity here could be a turn off. *HCC #256*

8



Yamaha RX-A550 → £550 ★★★★½
Only a 5.1-channel model – and subsequently not endowed with Atmos/DTS:X chops – the RX-A550 impresses with its audio performance, design and networking features. *HCC #252*

9



Cambridge Audio CXR120 → £1,500 ★★★★☆
This Brit-designed 7.2-channel receiver focuses on performance and ignores object-based audio and built-in Bluetooth. Sound quality is assured and construction is monstrous. *HCC #251*

10



Onkyo TX-RZ800 → £1,050 ★★★★☆
Feature-packed (DTS:X, HDCP 2.2) and sporting a new, clean design, Onkyo's mid-priced nine-channel AVR is easy to use and sounds sprightly, if a little short on aggression. *HCC #253*

TECH INFO: AV RECEIVERS



Tackling new heights: A recent innovation in AVR circles is the introduction of Dolby Atmos, the object-based sound format that has taken off in commercial cinemas and is supported in the home by the likes of Onkyo, Pioneer, Denon, Marantz and Yamaha. This requires new height speakers in addition to a regular 'flat' 5.1 or 7.1 speaker configuration. The heights can either be physically mounted in/on your ceiling, or provided via up-firing reflective models. Setup can be complex, but the results are certainly impressive. Atmos-encoded Blu-rays are a bit thin on the ground, but you can use Dolby Surround post-processing with regular 5.1/7.1 soundtracks to get the most from your new AVR/speakers. Rivals to Atmos are Auro-3D, which uses height speakers in a different configuration, and DTS:X. Most AVR brands have pledged support for the latter; software is beginning to arrive.

How much power?: Many of the mass-market AV receiver manufacturers are involved in a specifications race to see who can say their model is the most powerful, which can be confusing for consumers. For instance, both Krell's £7,000 S-1500 seven-channel power amp and Yamaha's £500 RX-V675 both claim 7 x 150W – the important part is that Krell's figure is into an eight-ohm load with all channels driven, and that Yamaha's is with one channel into a four-ohm load, which is hardly a real-world situation. The best advice is ignore the numbers game and get a demo of your desired AVR with the same, or similar, speakers that you intend to partner it with.

TOP 5 Bonus features



Kingsman: The Secret Service Revealed
A lengthy (92-minute) doc that is a must-watch for fans of the kinetic British comic book adaption, this looks back at the movie's origins and delves deep into its production.
★★★★☆



Secrets of the Force Awakens...
This 70-minute *Making of...* feature accompanying the latest *Star Wars* flick is essential viewing for franchise fans, going into detail about director JJ Abrams' production processes.
★★★★½



Pawns No More: Making The Hunger Games: Mockingjay – Part 2
Who expected this action flick to be accompanied by an epic 141-minute eight-part doc that covers practically everything about the film's production?
★★★★★



The Life, Legacy and Legend of Don Borchers
Brilliant documentary addition to the *Children of the Corn* Trilogy boxset focusing on the career of producer Don Borchers. Stuffed with insight, humour and Hollywood tales.
★★★★★



Production Diaries
A bumper collection of featurettes accompanying *Bad Boys II* on BD. Image quality may be standard-def, but there's plenty of input here from Bay and insight into his madcap filmmaking world.
★★★★☆

TOP 10 Subwoofers

1 

SVS SB-2000 → £600 ★★★★★

This follow up to the SB-1000, which incorporates a new 12in driver and revamped Sledge DSP amplifier, offers immense value for money. A mid-sized woofer that imbibes your Blu-rays with potent LFE, the SB-2000 sounds quick and taut, and is a perfect introduction to what a truly good sub can accomplish. *HCC #233*

2 

REL 212SE → £2,750 ★★★★★
Lush design joins engineering nous in this premium sub with two active 12in drivers supported by a pair of passive radiators. Loud, deep and impactful, your BDs are in safe hands. *HCC #246*

3 

JL Audio Fathom F212 → £5,900 ★★★★★
The US brand arrives in the UK in style – this 2 x 12in, 3,000W brute not only looks gorgeous, it's capable of a mindblowing performance. Got a big room? Get one of these! *HCC #214*

4 

REL S-5 → £1,600 ★★★★★
A step up from REL's affordable T series, this 12in model is large and weighty, with a performance level to match. Fast and tight but capable of dropping very low indeed. *HCC #234*

5 

Bowers & Wilkins PV1D → £1,200 ★★★★★
One of the coolest-looking subs on the planet, B&W's PV1D uses DSP trickery to craft an opulent low-end performance. The touch-sensitive OLED display is pure class. *HCC #212*

6 

Eclipse TD520SW → £3,000 ★★★★½
This twin 8in woofer, driven by ICEpower amplification, aims for ultimate speed and tone – and succeeds. Simply put, the TD520SW is worth every penny of its asking price. *HCC #249*

7 

BK Electronics P12-300SB-DF → £475 ★★★★½
Bass heads can get outrageous value for money in the shape of BK's overperforming 12in sub. A front-firing model is also offered, and other finishes knock the ticket down to sub-£400. *HCC #247*

8 

JL Audio Dominion d108 → £900 ★★★★½
Compact subwoofer that employs an innovative 8in driver (and a 500W amp) to go bigger and deeper than you might imagine. Compatible with JL Audio's JLink wireless system. *HCC #260*

9 

SVS PB-2000 → £750 ★★★★½
The ported sibling to the SB-2000, this woofer uses the same driver and amp arrangement, but in a far larger cabinet. Bass goes deeper, but not at the expense of finesse. *HCC #243*

10 

Artison Nano 1 → £800 ★★★★☆
Artison's media room-friendly woofer tucks twin 6.5in bass drivers and a 300W amp into its compact frame. Bass extension isn't the deepest, but this is tight, fast and heaps of fun. *HCC #253*

TECH INFO: SPEAKERS



Why use more than one sub?: Using two subwoofers (or perhaps four) should, in theory, bring huge rewards in terms of bass performance. But remember that LFE is a tricky beast to control. Running two subs may simply double problems in your room like room boom and suck-outs, where outgoing and reflected bass sounds cancel each other out. If you have some flexibility in where you place subwoofers, trial and error may well throw up some interesting results. The acoustics wizard Floyd E Toole (his book *Sound Reproduction: The Acoustics and Psychoacoustics of Loudspeakers and Rooms* is fine bedtime reading) suggests one LFE sub to either side of the room may be best for accuracy while placing them in the front corners would be best for overall bass power. Yet there is no hard and fast rule as to what will work best for every room, and you may find that simply using one (large) subwoofer is preferable as it's the easiest to get sounding right.

DEMO DELIGHT

San Andreas: This brilliantly over-the-top SFX-heavy disaster flick magicks up a scenario where both downtown Los Angeles and San Francisco (not to mention the Hoover Dam) are hit by mega earthquakes, and its Atmos mix is subsequently loaded with LFE. Buildings topple and pavements tear apart with real fear-inducing weight, keeping your sub on its toes for much of the 110-minute running time.

TOP 5 Console games



Tom Clancy's The Division
Ubisoft's long-gestating online multiplayer RPG/shooter proves worth the wait, courtesy of its well-realised future New York environment, varied gameplay (including solo missions) and grin-inducing weaponry.
★★★★½



LEGO Marvel Avengers
The best platform/puzzler yet from the TT Games *LEGO...* franchise. Packed with your favourite Marvel characters, it takes plot queues from the blockbuster movies. Smart, funny and offers plenty of game-time.
★★★★½



Batman Arkham Knight
The concluding part of Rocksteady's trilogy gives players an immense world to explore – everything here is bigger and better than before – and the moody, cinematic visuals are a treat for your display.
★★★★½



Metal Gear Solid V: The Phantom Pain
Our pick for 'Game of the Year' in 2015, this open-world stealth/actioner dazzles with its breadth, interaction, flexibility and lush visuals. A fitting end to the legendary series.
★★★★★



Transformers: Devastation
Forget the Michael Bay movie series, this action-packed *Transformers* game harks back to the 1980s 'toon series. As such, it looks lush, with its cel-shaded style igniting childhood memories. And it plays great too.
★★★★½

TOP 10 Accessories

1



KEF R50 → £600 ★★★★★

KEF's Dolby Atmos-enabled reflective modules are a smart choice for anyone looking to beef up their speaker system. Using the company's Uni-Q point source drivers pays real dividends, enabling full-range sonics that reach deep into your cinema room. Styling and build quality are first rate. £600 gets you a pair – you'll soon want four... *HCC #252*

2



Amazon Fire TV 4K → £80 ★★★★★
Amazon reboots its media player to include 4K video prowess, greater storage capability and a souped-up engine. The result is an intuitive add-on that's ideal for 4K TV owners. *HCC #254*

3



Asus RT-AC87U → £160 ★★★★½
A high-spec router can help you get the best from home media streaming – this feature-laden dual-band Asus impresses with speed and range and customisation options. *HCC #259*

4



QNAP HS-251 → £300 ★★★★½
Adding HDMI connectivity to a NAS device is surprisingly useful – and this slim-line model from QNAP is styled to grace your living room. Flawless media playback and responsive. *HCC #248*

5



Now TV → £15 ★★★★½
Among the new tricks of this second iteration of Sky's compact streamer are 1080p output, microSD and USB inputs and a faster processor. And it's still ridiculously affordable. *HCC #253*

6



Pioneer XDP-100R → £500 ★★★★½
Android-based hi-res audio/video player that's ready for MQA files and sounds smooth and detailed. The 720 x 1,280 screen (4.7in) is up to the job with VOD apps and games. *HCC #256*

7



Philips Hue → £180 ★★★★½
These Wi-Fi-enabled lightbulbs might be expensive (this £180 starter pack includes two, plus the Wi-Fi bridge) but making your own multicoloured lighting scheme is a blast. *HCC #220*

8



Logitech Harmony Elite → £270 ★★★★½
Flexible and relatively easy to set up, this all-in-one remote package combines touchscreen handset and hub with smart device app. Worthwhile if you have a stacked kit rack. *HCC #256*

9



Devolo dLAN 550 Wi-Fi Starter Kit → £100 ★★★★☆
Affordable Powerline option bringing stable data transmission (plus Wi-Fi) to an additional zone via mains wiring. Extra plugs sold separately for £60. Not the fastest around. *HCC #260*

10



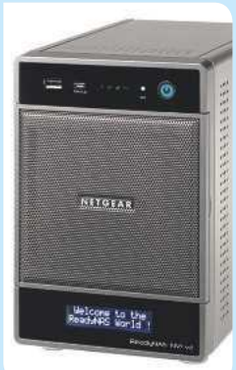
Sony PlayStation 4 → £350 ★★★★☆
The PS4 offers a killer gaming experience, with the under-the-hood power resulting in great-looking games. Spins Blu-rays, too (including 3D), but don't expect 4K disc playback. *HCC #229*

TECH INFO: MEDIA PLAYERS



What about my TV?: Most flatscreen TVs from the major brands (Sony, Samsung, Panasonic, LG, Philips, Hisense, etc) also incorporate media player functionality, using Ethernet or Wi-Fi to stream from your home network, or from plugged-in USB drives. Most modern Blu-ray players offer this, too. However, file support is rarely as extensive as on dedicated devices from the likes of Western Digital and A.C. Ryan, and our experience shows some are more adept at playback from USB than over a network. Nor (obviously) is a TV or BD player portable. If your media collection extends beyond JPEGs and MP3s into lossless audio rips and esoteric HD video formats, then a standalone player is a good investment.

Storage: You can, if you really want, store all your files on a plethora of USB drives, or on your PC, but it's best to get a NAS (Network Attached Storage) device for simplified sharing of your media across a network with multiple players, such as one from Netgear's ReadyNAS range (pictured). These dedicated devices often offer RAID array file backup, and are managed via browser software. Storage capacity can be anything from 1TB to 12TB and beyond.



TOP 5 Blu-ray/DVD boxsets



American Horror Project: Volume One
First in a planned series of boxsets focusing on forgotten US fright flicks, this collects a trio of solid '70s horrors (with variable image quality) and bundles them with plenty of extras.
★★★½☆



Doctor Who: The Complete Ninth Series
Peter Capaldi's sophomore year as the Time Lord packs 12 superb episodes plus the 2014/2015 Christmas specials. This BD set carries 1080i50 encodes and DTS-HD 5.1 soundmixes.
★★★★☆



Mr. Robot: Season One
Brilliant tech-infused TV thriller/drama series that already has us psyched about Season Two. Music-minded DTS-HD Master Audio 5.1 mixes grace this boxset's ten Full HD encodes. Not many extras, though.
★★★★☆



Game of Thrones: The Complete Fifth Season
HBO introduces Dolby Atmos soundmixes as standard to its latest *Game of the Thrones* HD release. The result is a gripping fantasy show blessed with excellent AV credentials.
★★★★½



Banshee: The Complete Third Season
US drama series that dazzles with its action set-pieces. This 10-episode third run, split across four discs, offers superb 1080p encodes and suitably bruising DTS-HD MA 5.1 mixes.
★★★★½

TOP 10 Soundbars & Soundbases

1



Yamaha YSP5600SW
→£1,900 ★★★★★

With its 46 drivers (including upfirers) this premium 'bar delivers precisely-steered and immersive audio, even of the Atmos variety. Potent wireless sub and 4K-capable HDMI switching sweeten the high-end deal. *HCC #254*

2 NEW ENTRY



Canton DM55 →£330 ★★★★★
Canton's smallest soundbase still delivers big sonic thrills. Twin woofers underpin clean and crisp mids and highs, and build quality is first-rate. Doddle to use. Bluetooth built-in. *HCC #260*

3



Sony HT-XT3 →£450 ★★★★½
A great-sounding soundbase blessed with HDMI connectivity, HDCP 2.2, Wi-Fi, Bluetooth, multiroom support, screen mirroring and app control. There's little to complain about. *HCC #250*

4



Cambridge Audio TV5 →£300 ★★★★½
Twin 6.5in bass drivers lend the TV5's sound some decent low-end heft, but not to the detriment of the rest of the soundstage. An enjoyable, balanced listen. Easy to use. *HCC #245*

5



Q Acoustics Media 4 →£330 ★★★★½
A no-nonsense offering from the speaker specialist, which ignores HDMI inputs and daft DSP modes in favour of creating a nuanced, solid 2.1 soundscape. *HCC #238*

6



Sony HT-RT5 →£500 ★★★★½
Sony joins the growing 'soundbar with wireless surrounds' market with an enjoyable debut that packs some worthwhile DSP modes and plenty of media-savvy functionality. *HCC #257*

7



DALI Kubik One →£800 ★★★★½
The Danish speaker brand brings a slice of glamour to your setup with this stylish soundbar. No HDMI or digital decoding but it packs a tight, lively and nuanced sound. *HCC #248*

8



Yamaha YSP-1600 →£500 ★★★★☆
With support for Yamaha's MusicCast multiroom and a tasty low-end even without a subwoofer, this 'bar is a solid one-box solution. Single HDMI in/out, old-fashioned UI. *HCC #258*

9



Philips Fidelio B5 →£600 ★★★★☆
Detachable battery-powered side speakers let you enjoy both genuine surround sound and straight 2.1 (there's a wireless sub). And each speaker offers Bluetooth hookup. Innovative. *HCC #249*

10



Orbitsound A70 →£500 ★★★★☆
Not overly specified – there's no HDMI, for instance – but this elegant 'bar/sub combi just about justifies its price tag with an enveloping and very well-balanced performance. *HCC #251*

TECH INFO: TV PLATFORMS



TV addicts – go free, or pay-to-view?:
The analogue switch-off has created a competitive market in free-to-air platforms, while Sky and Virgin Media are squaring up to the likes of EE TV, Amazon Prime and Netflix. Deciding which service is right for you can be complex, and you may find your needs are best catered for by a combination.

Sky+HD: The long-running satcaster offers a plethora of HD channels, with content including recent movie releases, live sports and sought-after US shows. Hardware options include the 2TB dual-tuner PVR. An upgrade, dubbed Sky Q, is arriving soon, and will offer 4K support among its tricks.

Virgin Media TiVo: The cable giant offers a three-tuner PVR (1TB) with intelligent TiVo recording tricks, catch-up apps (including Netflix and Spotify), and over 240 channels (depending on package). Premium Sky content can be added on a monthly basis.

Freeview: Common option when it comes to TVs and STBs. Freeview offers 13 HD channels plus SD and radio. Freeview Play adds IPTV integration to the EPG – and you'll find it on some Panasonic TVs.

Freesat: Satellite service offering a similar – but not identical – channel lineup to Freeview, delivered via a dish but without a subs cost. Budget-priced STBs are available.

YouView: This relatively new kid on the block integrates the UK's main catchup portals directly into a backwards EPG. Again, channels are broadly similar to Freeview and there's no contract. Humax (PVRs) and Sony (TVs) are leading the hardware charge.

TOP 5 Back-catalogue Blu-rays



Bad Boys/Bad Boys II: 20th Anniversary Edition
The first time Michael Bay's brash sequel has been available on Blu (joined by the original). It arrives with an eye-popping HD image, zippy DTS-HD 5.1 mix and lots of archival extras.
★★★★½



The Tragedy of Macbeth
Roman Polanski's brutal 1971 Shakespeare adaptation is chosen as one of the first Criterion Collection Blu-rays to hit the UK. A new hour-long doc is the pick of the extra features. Audio is 3.0-flavoured.
★★★★☆



A Touch of Zen
A new addition to Eureka's Masters of Cinema label, this double-disc set (with an extras-packed DVD) delivers a sensational hi-def presentation of King Hu's 1971 three-hour-plus *wuxia* masterpiece.
★★★★½

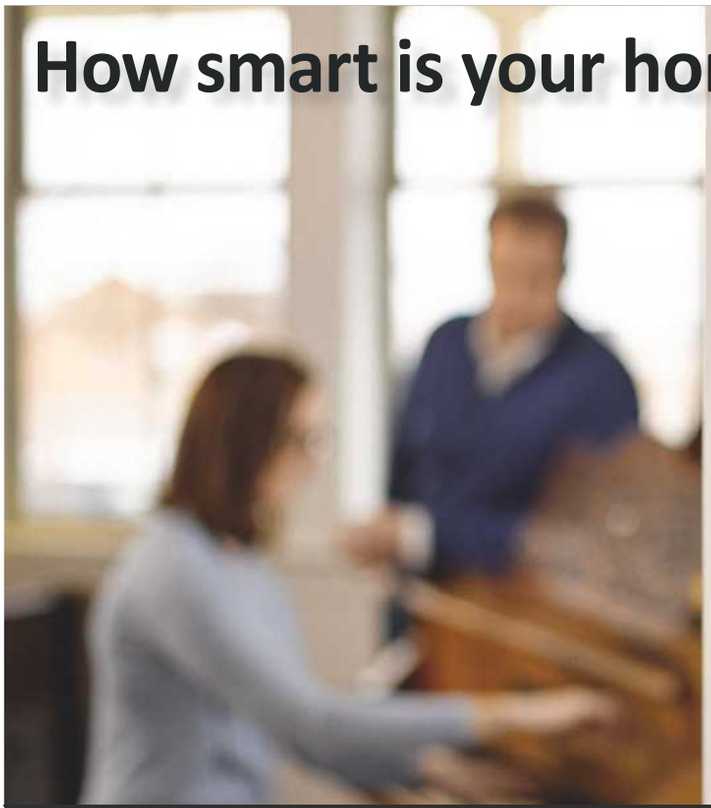


The Third Man
StudioCanal takes a second stab at releasing this celebrated 1949 Brit-noir starring Orson Welles, rewarding buyers with an excellent image taken from a 4K restoration plus some new documentary material.
★★★★½



Citizen Kane: 75th Anniversary Edition
Warner's excellent 4K restoration of this classic flick gets a UK outing on a premium Blu-ray release – extras include commentary tracks, a 48-page book and more.
★★★★½

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TOP 5 PVRs



Virgin Media TiVo, £subscription
This triple-tuner PVR offers recording flexibility, useful features – you can undelete deleted shows! – and smart TiVo functionality. If you're in a cable area, consider it.
★★★★½



Sky+HD, £subscription
Sky's channel choice is second-to-none and its twin tuner 2TB PVR is a perfect partner. The recent EPG tweak is welcome and Anytime (the push VOD service) is brilliant for catching up on new movies
★★★★★



Humax HDR-1100S, £190
Freesat Freetime PVR that impresses with its usability, VOD options and form factor – Humax's small, white box will slot into any kit rack. We tested the 500GB version – 1TB and 2TB models are also available
★★★★½



Humax DTR-T4000, £subscription
This YouView-based PVR is required to get BT Sport's new Ultra HD channel – available to those with BT fast fibre and a BT TV sub. Easy to use and with 1TB of storage
★★★★½



EE TV Smart Box £subscription
This quad-tuner 1TB PVR, from the mobile/broadband corp, offers innovative Replay 24-hour channel recording and great Smart device streaming. Needs more catch-up though
★★★★☆

TOP 5 Headphones



Sony MDR-HW700DS, £800
Comfy cans supplied with an HDMI surround processor, enabling multichannel audio to be fed to a virtual 9.1-channel soundstage. The effect is superb – great for late-night listening
★★★★★



Sony MDR-1ABT, £300
Another cracking Sony pair with a good sonic balance, here with integrated Bluetooth allowing for cable-free movie watching (although they can be used wired too). Large design perhaps not suited to travel
★★★★½



Lindy Cromo NCX-100, £100
A cost-effective domestic option and great for travelling, these noise-cancelling 'phones (which can also be used as a normal passive design) feature a pleasant, balanced sound
★★★★☆



PSB M4U1, £220
Aimed at both home and on-the-move use (and supplied with a carry case and two cable options), the M4U1s offer solid bass response and impactful highs. Build quality is good, as is comfort
★★★★★



Beyerdynamic T70, £330
Closed-back cans with excellent weight distribution for a comfy fit and a sound that doesn't put a foot wrong. These motor through movie soundtracks with vigour, clarity and a solid low-end
★★★★★

TOP 5 Wireless speakers



KEF Muo, £300
Portable Bluetooth speaker that's a cut above much of the competition. KEF's sonic knowhow results in a punchy, dynamic presentation that cherishes lossless rips. Excellent build quality
★★★★★



Sony SRS-X11, £60
An affordable palm-sized Bluetooth speaker with internal rechargeable battery, Sony's SRS-X11 is supremely portable and sounds decent for the money. A neat little gizmo. Get two and they can work in stereo
★★★★½



Samsung WAM7500, £500
Also known as the R7, this addition to Samsung's multiroom system delivers authentic omnidirectional sonics via its super-stylish oval-shaped enclosure. Expensive, but excellent
★★★★★



Simple Audio Listen, £400
Desktop stereo speakers with Bluetooth support, these benefit from separate tweeter/midbass units and a classy construction. Performance is well-balanced, and a subwoofer output is offered for extra bass
★★★★★



Geneva AeroSphere Large, £650
Dramatic-looking Wi-Fi/Bluetooth-enabled speaker melding a 6in bass driver to tweeter and mid-range units for an impressively beefy sound. Can link with other AeroSphere kit
★★★★☆

HOME CINEMA Choice

ISSUE #262 ON SALE July 7

➜ IN THE NEXT ISSUE

Bigscreen binge watching! We round up the TV shows you can't afford to miss
Dolby Vision The final frontier in home cinema?
DIY movie den An HCC reader guides you through his 7.2.4 cinema setup

➜ HARDWARE

Trinnov Altitude 32 processor Philips 65PUS7610 HDR TV **Dynaudio Emit 5.1 speakers** Nvidia Shield media player **Sony VPL-HW45ES projector**
PLUS News, software, opinion, AV rooms and more!

CONTENTS SUBJECT TO CHANGE – BUT ONLY FOR THE BETTER



AV Avenger

4K Blu-ray may be a premium video format, but the packaging is far from classy. It's enough to get **Steve May** reminiscing about LaserDisc and stroking his SHM-CD collection

THEY SAY CLOTHES make the man, but do they also make the collectable? If they do, it's a truism lost on the software industry if the packaging of early 4K Blu-ray releases is anything to go by.

You would have thought that any new format which depends on early adopter support to gain traction would at least look like it was trying to appeal to enthusiasts. But what we've been given is at best just a black-liveried version of the standard Blu-ray case, or worse.

Ridley Scott's *The Martian*, currently bundled with Samsung's K8500 UHD player, is flat-out ghastly. The case is just 50 per cent solid, thanks to huge cut-outs front and back. This lends it a horrible, insubstantial (weightless?) quality. Mine also came with a security tape over the silver Blu-ray logo, which when removed took half the finish off with it. Unwrapped it looks like a knock-off pirate disc, and certainly not something I'd actually want to show off.

I'm a man of steel

There's a pride of ownership that drives collecting physical media – a sense of tactile satisfaction and artistic stimulation. Consider the allure of steelbooks. Limited editions are often eagerly snapped up, and you don't typically have to pay over the odds for these tinned treasures. A look around Zavvi reveals any number of beautiful steelbooks at bargain prices.

Specialist labels understand that quality drives desire. Arrow Video's *American Horror Project* comes with a slipcase featuring specially commissioned artwork and a 60-page booklet. You may not know the movies, but you'll still want this thing on your disc shelf. Similarly, I can't help feel our ongoing love affair with vinyl is partly down to an emotional attachment to large sleeve art.

What I actually want from 4K Blu-ray is the UHD equivalent of what we once enjoyed with premium LaserDisc releases: the best possible AV presentation dressed to impress. Is that really too much to ask? My LD players (note the plural) may be lost at the back of my loft, but my software collection remains to hand, because many are works of art.

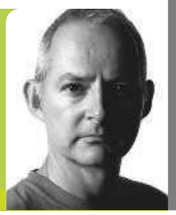
Although it seems incomprehensible now, **I happily paid hundreds back in the day for lavish LaserDisc sets**. The *Star Wars Trilogy Definitive Collection* box, released in the early 90s, is so heavy only a Wookie can lift it. Inside this huge silver-embossed box are nine discs (three for each movie), a glossy booklet and a huge hardcover book covering the first two decades of Lucasfilm. It's a glorious, legendary package. My Laser collection also comprises multiple Disney Masterpiece special editions (*The Lion King* is my favourite, but *Beauty and the Beast* gives it a run for its money), which often came with limited edition art prints.

And some of my most treasured audio discs are Japanese SHM-CDs. These are packaged in mini-LP cardboard sleeve reproductions of the original vinyl releases. They are awe-inspiring. Japan has a massive physical music market, with tangible formats amounting to 85 per cent of all music consumed there. The fact they understand the art of packaging probably isn't unrelated.

Maybe studios think now is not the time to cultivate a premium aesthetic for the new format. They simply want to shift units, and expect the appeal of 4K HDR will be enough to do the job.

But will I be fondly remembering the 4K UHD Blu-ray release of *The Martian* in years to come? Unlikely. I'm already embarrassed by it ■

What are your favourite examples of film packaging/poster art? Let us know: email letters@homecinemachoice.com



Steve May came supplied in his very own collectable packaging. We keep him sealed in the hope that one day he'll be worth something...

ILLUSTRATION: BY TEKURA MAEVA



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